CANNON FALLS WASTEWATER TREATMENT PLANT

EQUIPMENT EVALUATION

CANNON FALLS, MINNESOTA

JUNE 2025

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Preliminary Only

Kevin J. Graves, P.E.

Date_____ License No. 17597

whks

engineers + planners + land surveyors

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Background

The City of Cannon Falls and its consulting engineer, WHKS & Co., have completed capacity evaluations of Cannon Falls' water and wastewater systems to determine the unallocated capacity that can be available for the potential Tract Development. This report outlines the wastewater evaluation, and a separate report outlines the water system evaluation. This report also evaluates the age and condition of the wastewater treatment equipment.

On April 2, 2025, WHKS personnel met with City of Cannon Falls staff to conduct an on-site review of the Wastewater Treatment Plant (WWTP) and observed existing conditions. During the site visit, City staff shared information about past and present operational items and WHKS evaluated the current pumping and treatment equipment.

The wastewater system was evaluated under the assumption that Tract Development would connect to the distribution/collection systems on the north side of town. The evaluation reviewed capacities of the following items:

- Wastewater Treatment Plant
  - Rated Average Dry Weather → 0.84 MGD
  - Rated Average Wet Weather → 0.92 MGD
  - Rated Peak Hourly Wet Weather → 3.27 MGD
- Wastewater Collection Piping
- Wastewater North Lift Station
  - Firm Capacity → 900 gpm

The Cannon Falls WWTP is in the NE part of Cannon Falls, Minnesota in Goodhue County, Minnesota. The Plant address is 825 Cannon River Avenue, Cannon Falls, MN 55009.

Contact Information

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Population Served

The City of Cannon Falls has a population of 4,220 according to the 2020 US Census, reflecting an 8.5% increase from 3,890 in the 2000 Census and a 3.4% increase from 4,082 in the 2010 census.

The City currently serves four Significant Industrial Users (SIUs): Lorentz Meats, Gemini, Inc. and Cannon Equipment, LLC (two locations). Copies of SIU agreements are not available. Based on discussions with City staff, it is unclear whether formal agreements exist for Gemini or Cannon Equipment, but conversations regarding usage have occurred. There have been no recent conversations with Lorentz Meats about usage. The City plans to pursue formal agreements with these industries in the future. For this evaluation, the industrial data is derived from water usage records rather than allocated agreements. See the spreadsheet in Appendix A.1 for water usage records of the top 10 users over the past ten years.

Based on discussions with City staff, this analysis utilizes a 2045 population equivalent value of 6,000. This is a conservative approach that provides flexibility as the City grows. Six of the top water users were excluded from growth projections as their usage is independent of the commercial growth that is typically associated with domestic growth. These users are highlighted on the Appendix A.1 spreadsheet.

System Information

Plant Description

The City of Cannon Falls owns and operates an activated sludge WWTP designed to meet the following effluent limits established by the Minnesota Pollution Control Agency (MPCA): Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and Total Phosphorus (TP). The WWTP is a Class B facility. The plant discharges to the Cannon River, which is classified as a 2Bg, 3, 4A, 4B, 5, 6, Water, Outstanding Resource Value Water.

Existing Wastewater Hydraulic Flows

The existing WWTP permitted flows are shown in Table 1, based on the City's current National Pollutant Discharge Elimination System (NPDES) permit. See Appendix A.5 for a copy of the existing permit. Flow records for the past ten years were extracted from the NPDES monitoring reports and are shown in Table 2. Average Dry Weather (ADW) flow is the daily average flow for the driest 30 consecutive days. Average Wet Weather (AWW) flow is the daily average flow for the wettest 30 consecutive days. Maximum Wet Weather (MWW) flow is the total maximum flow received during any 24-hour period during wet weather conditions. Average Daily Flow (ADF) is the average flow during an annual period. Flows are shown in Million Gallons per Day (MGD).

Table 1: Existing Permit Design Flows

DESCRIPTION	DESIGN VALUE
Average Dry Weather (ADW) Flow	0.84 MGD
Average Wet Weather (AWW) Flow	0.92 MGD
Peak Hourly Wet Weather (PHWW) Flow	3.27 MGD

Table 2: Flow Records 2015-2024

YEAR	ADW (MGD)	AWW (MGD)	MWW (MGD)	ADF (MGD)
2015	0.27	0.32	0.50	0.29
2016	0.19	0.39	0.62	0.29
2017	0.24	0.35	0.64	0.31
2018	0.24	0.32	0.80	0.28
2019	0.26	0.40	1.03	0.32
2020	0.28	0.32	0.71	0.30
2021	0.26	0.35	0.61	0.31
2022	0.22	0.34	0.55	0.28
2023	0.22	0.29	0.56	0.25
2024	0.21	0.32	0.65	0.25
Average	**0.24**	**0.34**	**0.67**	**0.29**
Maximum	**0.28**	**0.40**	**1.03**	**0.32**

Existing Wastewater Organic Loadings

The permitted organic loadings for existing WWTP are shown in Table 3 and are based on the City's current NPDES permit. Loadings are shown in pounds per day (PPD).

Table 3: Existing Permit Design Loads

DESCRIPTION	DESIGN VALUE
BOD	1,918 PPD
TSS	1,918 PPD
TP	54 PPD

Existing wastewater organic loadings are summarized in the following tables. The annual averages were calculated by summing all sample results for a parameter over a 12-consecutive month period (365-days) and dividing by the number of samples. Max 30-Day averages were calculated by averaging the previous 30 days' loadings for each calendar day and selecting the maximum average for the year. Loadings are shown in pounds per day (PPD) and milligrams per liter (mg/L).

Table 4: BOD Existing Influent Loadings

YEAR	ANNUAL AVERAGE MG/L	ANNUAL AVERAGE PPD	MAX 30-DAY AVERAGE MG/L	MAX 30-DAY AVERAGE PPD	MAXIMUM MG/L	MAXIMUM PPD
2015	375	920	507	1,221	765	1,988
2016	515	1,292	832	2,026	1,850	4,570
2017	471	1,238	644	1,683	1,190	2,870
2018	585	1,336	863	2,225	2,080	4,478
2019	692	1,869	1,373	3,815	2,940	7,508
2020	430	1,043	532	1,346	645	1,766
2021	546	1,476	969	2,479	1,810	4,516
2022	501	1,159	997	2,556	1,360	3,768
2023	835	1,796	1,279	2,775	1,760	3,701
2024	945	2,041	1,256	2,640	2,000	4,675
Average	**589**	**1,417**	**925**	**2,277**	**1,640**	**3,984**

Table 5: BOD Existing Effluent and Percent Removals

YEAR	INFLUENT AVERAGE MG/L	INFLUENT AVERAGE PPD	EFFLUENT AVERAGE MG/L	EFFLUENT AVERAGE PPD	% REMOVAL
			PERMIT LIMIT (25 MG/L)	PERMIT LIMIT (110.2 PPD)	PERMIT REQ: (85%)
2015	375	920	4	10	99%
2016	515	1,292	4	9	99%
2017	471	1,238	6	14	99%
2018	585	1,336	7	14	99%
2019	692	1,869	7	15	99%
2020	430	1,043	7	16	98%
2021	546	1,476	6	15	99%
2022	501	1,159	6	13	99%
2023	835	1,796	6	13	99%
2024	945	2,041	4	9	100%
Average	**589**	**1,417**	**6**	**13**	**99%**

Table 6: TSS Existing Influent Loadings

YEAR	ANNUAL AVERAGE MG/L	ANNUAL AVERAGE PPD	MAX 30-DAY AVERAGE MG/L	MAX 30-DAY AVERAGE PPD	MAXIMUM MG/L	MAXIMUM PPD
2015	399	981	563	1,329	1,060	2,335
2016	483	1,170	675	1,685	993	2,357
2017	488	1,276	1,103	2,999	2,840	7,537
2018	544	1,238	942	2,026	2,210	4,058
2019	648	1,757	992	2,910	1,570	4,161
2020	296	721	592	1,490	847	2,099
2021	345	929	645	1,674	1,070	2,833
2022	354	816	722	1,840	1,120	2,496
2023	620	1,334	1,630	3,312	3,490	6,874
2024	853	1,873	1,556	3,689	2,690	6,409
Average	**503**	**1,209**	**942**	**2,296**	**1,789**	**4,116**

Table 7: TSS Existing Effluent & Percent Removals

YEAR	INFLUENT AVERAGE MG/L	INFLUENT AVERAGE PPD	EFFLUENT AVERAGE MG/L	EFFLUENT AVERAGE PPD	% REMOVAL
			PERMIT LIMIT (30 MG/L)	PERMIT LIMIT (132.3 PPD)	PERMIT REQ: (85 %)
2015	399	981	7	16	98%
2016	483	1,170	9	21	98%
2017	488	1,276	8	19	99%
2018	544	1,238	9	19	98%
2019	648	1,757	8	18	99%
2020	296	721	7	17	98%
2021	345	929	12	27	97%
2022	354	816	10	22	97%
2023	620	1,334	11	23	98%
2024	853	1,873	10	21	99%
Average	**503**	**1,209**	**9**	**20**	**98%**

Table 8: Existing Total Phosphorus Influent Loadings and Effluent % Removals

YEAR	INFLUENT AVERAGE MG/L	INFLUENT AVERAGE PPD	EFFLUENT AVERAGE MG/L PERMIT LIMIT (1 MG/L ANNUAL AVERAGE)	EFFLUENT AVERAGE PPD PERMIT LIMIT (2802 LBS/YR TOTAL)	% REMOVAL
2015	7	18	0.4	1.0	95%
2016	9	22	0.5	1.3	94%
2017	8	21	0.5	1.1	95%
2018	13	30	0.6	1.2	96%
2019	11	31	0.6	1.3	96%
2020	11	26	1.0	2.8	89%
2021	16	44	0.9	2.1	95%
2022	15	34	1.4	3.2	91%
2023	15	32	0.6	1.3	96%
2024	13	28	0.6	1.3	95%
Average	12	29	0.7	1.7	94%

Tables 4-8 illustrate that the existing WWTP has consistently met its effluent limits and removal rates for BOD, TSS, and TP over the past ten years. On average, the plant receives loadings that are below their permitted design values. However, the plant periodically receives large slugs of BOD, TSS, and TP loadings which are above the permitted design loadings. These increases are suspected of coming from industrial discharges. While the plant has still met its effluent limits, it is recommended that the City implement agreements with the local SIUs to monitor their discharges to the WWTP.

System Components

The treatment process at Cannon Falls WWTP utilizes oxidation ditches for primary treatment and final clarification with alum-assisted phosphorus precipitation for secondary treatment. Major wastewater treatment components of the plant are described in the following table.

Table 9: Cannon Falls WWTP Process Equipment and Capacities

STRUCTURE/EQUIPMENT	QUANTITY	CAPACITY[A]
Raw Wastewater Pump	4	3.27 MGD (Firm)
Mechanical Bar Screen	1	3.27 MGD
Manual Bar Screen	1	3.27 MGD
Degritter	1	4.00 MGD
Grit Pump	1	250 GPM
Grit Concentrator	1	250 GPM
Grit Dewatering	1	100 GPM
Mixing Basin	3	148,400 Gallons Total
Oxidation Ditch	2	2,273 PPD BOD (AWW) 4,545 PPD BOD (Peak)
Final Clarifier	2	3.27 MGD Surface Overflow Rate = 1,028 gpd/sq.ft
RAS Pump	3	1,140 GPM (Firm)
WAS Pump	2	120 GPM (Firm)
Chemical Feed Pump	3	30 GPH (Firm)
Chemical Feed Tank	1	4,990 Gallons
UV Disinfection	1	3.48 MGD
Aerated Solids Storage Tanks	2	1,579,000 Gallons Total

A. Million Gallons per Day (MGD), Gallons per Minute (GPM), Gallons per Hour (GPH), Pounds per Day (PPD).

The WWTP is currently operating below its available capacity, with potential to accommodate and meet demands for new development. Meeting any demands beyond the existing rating would require upgrades at a minimum to the raw wastewater pumps, final clarifier, and UV disinfection system.

A plan sheet of the existing WWTP site is included in Appendix A.2. A detailed equipment list is included in Appendix A.3.

Equipment Age and Condition

The following is a recommended equipment replacement schedule based on the age and condition of the WWTP components at the time of this evaluation (Spring of 2025). It is not based on projected growth or additional industry. The schedule is for planning purposes only

Table 10: Equipment Replacement Schedule

EQUIPMENT	YEAR INSTALLED	REPLACEMENT TIMEFRAME	CONDITION
Raw Wastewater Pump Station			
Raw Wastewater Pump No. 1	2022	10-20 years	Good
Raw Wastewater Pump No. 2	2022	10-20 years	Good
Raw Wastewater Pump No. 3	2022	10-20 years	Good
Raw Wastewater Pump No. 4	2001	0-5 years	Poor
Slide Gate	2022	10-20 years	Good
Slide Gate	2022	10-20 years	Good
Sluice Gate	2021	10-20 years	Good
Preliminary Treatment Building			
Grit Vortex (Degritter)	2001	5-10 years	Fair
Grit Dewatering Equipment	2001	0-5 years	Poor
Grit Pump	2001	0-5 years	Poor
Fine Screen	2001	5-10 years	Fair
Manual Bar Screen	2001	10-20 years	Fair
Screenings Compactor/Washer	2001	5-10 years	Fair
Level sensor	2022	10-20 years	Good
Mixing Basins			
Mixer No. 1	2001	5-10 years	Fair
Mixer No. 2	2001	5-10 years	Fair
Mixer No. 3	2001	5-10 years	Fair
Oxidation Ditches			
Mechanical Aerator No. 1	2001	5-10 years	Fair
Mechanical Aerator No. 2	2001	5-10 years	Fair
Final Clarifier Complex			
Alum Storage Tank	2001	5-10 years	Fair
Alum System No. 1	2001	5-10 years	Fair
Alum System No. 2	2001	0-5 years	Out of Service
Alum System No. 3	2001	0-5 years	Out of Service
Final Clarifier No. 1 Mechanism	2001	0-5 years	Poor
Final Clarifier No. 2 Mechanism	2001	0-5 years	Poor
WAS Pump No. 1	2001	0-5 years	Fair
WAS Pump No. 2	2001	0-5 years	Fair
RAS Pump No. 1	2001	0-5 years	Fair
RAS Pump No. 2	2001	0-5 years	Fair
RAS Pump No. 3	2001	0-5 years	Fair

Scum Pump	2001	0-5 years	Fair
RAS Flow Meter No. 1	2025	20 years	Good
RAS Flow Meter No. 2	2001	0-5 years	Fair
RAS Flow Meter No. 3	2001	0-5 years	Fair
WAS Flow Meter	2001	0-5 years	Fair
UV Disinfection Building			
Flow Meter	2001	0-5 years	Fair
UV System No. 1	2001	0-5 years	Fair
UV System No. 2	2001	0-5 years	Fair
Sampler	2020	10-20 years	Good
Sludge Storage Tank Structure			
Aeration Blower No. 1	2001	0-5 years	Fair
Aeration Blower No. 2	2001	0-5 years	Fair
Aeration Blower No. 3	2001	0-5 years	Fair
Aeration Blower No. 4	2001	0-5 years	Fair
Aeration Blower No. 5	2001	0-5 years	Fair
Truck Loading Pump No. 1	2001	0-5 years	Fair
Truck Loading Pump No. 2	2001	0-5 years	Fair
Generator	2001	5-10 years	Fair
Auto Transfer Switch	2001	5-10 years	Fair
Fuel Tank	2001	5-10 years	Fair
Fuel Pump	2001	5-10 years	Fair
Miscellaneous			
PLCs	2001	0-5 years	Fair
MCCs	2001	5-10 years	Fair
Sludge Storage Tank Building	2001	0-5 years	Poor

A typical intended useful life for mechanical equipment is 20 years. During the site visit it was noted that a lot of the equipment is over 20 years old but appears to be in fair condition and has been well maintained which has extended the equipment past its expected useful life.

The structures at this facility were all constructed in 2001 and the typical intended useful life for basins or structures is 50 years. The sludge storage tank building was included in this list for planning purposes even though it is not technically equipment. Structural defects were noted in the roof and the wall joints connecting the central room to the tanks. The City should plan to address this with their next equipment project.

Wastewater Capacity Evaluation

The following table indicates the current usage of the WWTP within its permitted capacity, as well as projected usage based on anticipated City growth over the next twenty years.

Table 11: Cannon Falls WWTP Overall Capacities

	EXISTING CAPACITY[A]	CURRENT USAGE	INDUSTRIAL GROWTH[C]	DOMESTIC /COMMERCIAL GROWTH	AVAILABLE CAPACITY
Average Dry Weather (ADW) MGD	0.84	0.28[B]	0	0.14[D]	**0.42**
Average Daily Flow (ADF) MGD	N/A	0.32[B]	0	0.16[D]	**N/A**
Average Wet Weather (AWW) MGD	0.92 (Permitted) 1.08 (Design)[F]	0.40[B]	0	0.20[D]	**0.32 (Permitted) 0.48 (Design)**
Max Wet Weather (MWW) MGD	N/A (Permitted) 2.18 (Design)	1.03[B]	0	0.50[D]	**N/A (Permitted) 0.65 (Design)**
Peak Hourly Wet Weather (PHWW)	3.27 MGD / 2,270 gpm	1.09 MGD / 760 gpm[E]	0	0.53 MGD / 370 gpm[D]	**1.65 MGD / 1,150 gpm**
BOD PPD	1,918 (AWW Permit Value) 4,545 (Max Day Design)	1,417 (Average) 7,508 (Max)[B]	0	302[G]	**199 (Average) -3,265 (Max)**
TSS PPD	1,918 (AWW Permit Value) 4,545 (Max Day Design)	1,209 (Average) 7,537 (Max)[B]	0	356[G]	**353 (Average) -3,348 (Max)**
TP PPD	54 (AWW Permit Value) 127 (Max Day Design)	29 (Average) 255 (Max)[B]	0	8.9[G]	**16 (Average) -137 (Max)**

A. Capacity is based on existing NPDES permitted rating values or plant design values, if noted as such.
B. Current usage is based on the maximum values extracted City monitoring data from 2015-2024.
C. Existing industries are not currently planning for any major upgrades, and no future allocations are included.
D. Projected growth is based on an average usage population equivalent, excluding the average usage of the top 6 users (Appendix A.1).
    a. (6000-4,200) * 86.93 (PE) = Projected Growth
E. Peak values cannot be measured at the plant. This is based off a 3.4 peaking factor of ADF according to 10 State Standards.
F. Requires re-rating and reclassification of the plant as a major facility.
G. Based on typical loadings per capita for BOD/TSS/TP of 0.17PPD/0.20PPD/0.005PPD.

As described in the table above, the WWTP has available flow capacity that can be allocated to potential development if the City chooses. On an average day basis, the WWTP also has available organic loading capacity, as described above. However, there is no available capacity for additional peaks in organic loadings. Tract Development has indicated that its wastewater will have organic loadings lower than typical domestic loadings which will not cause significant peaks. As discussed previously, it is recommended that the City create agreements with their existing SIUs to monitor and reduce the peak loadings to the plant.

In addition to the WWTP capacity, a brief evaluation of the collection system was completed and summarized in memo to City staff dated April 24, 2025, which is included in Appendix A.4. To evaluate capacity for potential development in the north industrial park, the evaluation considered existing pipe capacities and lift station:

- Collection System Pipes
    - Multiple sections of pipe may need to be upsized to meet any additional flow. Additional field surveys will be required to determine pipe slope once actual requested flows are known.
- Lift Station
    - Current capacity is 900 gpm (1.3 MGD)
    - Current estimated average use of 200 gpm (0.29 MGD)
    - Potential increase to 2,000 gpm (2.88 MGD) if pumps are upgraded

Recommendations

Capacity Available for Industry

Based on the existing flows and loads and the reserve for population growth, the available capacities for the WWTP were calculated.

The following table describes the required system upgrades at certain flow demands requested by Tract Development.

Table 12: Summary of Capacity Limits

Upgrade	FLOW	ASSOCIATED TRACT EXCEEDING DEMANDS
WWTP Upgrades	0.32 MGD AWW 0.65 MGD MWW 1.65 MGD PHWW - Wastewater	Scenario 2 – 2031 MWW Demand (Interim)
Lift Station Upgrade	700 gpm Peak Hourly Flow - Wastewater	Scenario 2 – 2031 MWW Demand (Interim)
Collection System Upgrades[A]	550 gpm Peak Hourly Flow - Wastewater	Scenario 2 – 2031 MWW Demand (Interim)

A. Survey data is required to determine actual pipe capacities.

To meet the MWW demands of the Tract Development's Scenario 2 interim demand, the following WWTP elements would need to be upgraded: Raw wastewater pumps, final clarifier, and UV disinfection. A hydraulic analysis of the plant's piping and tank elevations was not a part of this scope. Increasing the plant's hydraulic capacity requires further hydraulic analysis.

To meet the interim and full buildout PHWW demands of Tract Development's Scenario 2, the development would need to construct a flow retention basin. The existing collection system and WWTP cannot support the peak demands without a complete overhaul of the plant and replacement of all collection piping to convey wastewater from the development.

Based on these capacity findings, City Staff, WHKS, and Tract Development need to discuss the required system upgrades to meet Tract Development's usage demands.

Appendix

A.1 : Top 10 Industrial Users Usage Spreadsheet

A.2 : WWTP Site Plan

A.3 : Equipment List

A.4 : Collection System Evaluation Memo

A.5 : NPDES Permit

Appendix A.1: Top 10 Industrial Users Summary

Cannon Falls Top 10 Industrial Users Yearly Water Usage

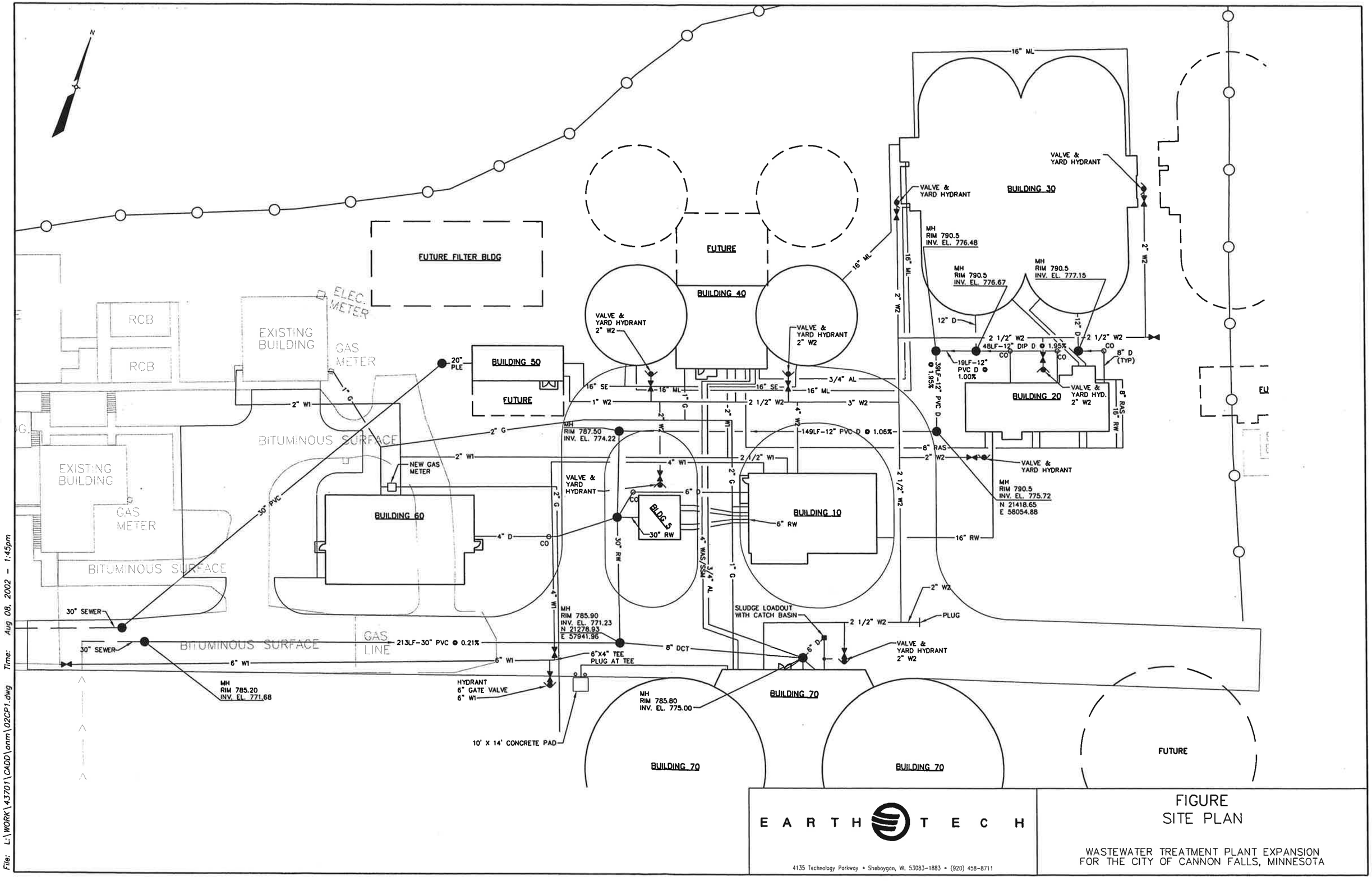
	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	Average	Avg GPD
Lorentz Meats	6,172,925	8,470,942	7,713,913	7,720,644	8,020,613	7,506,703	6,039,772	5,108,446	5,994,141	5,834,806	6,858,291	18,790
Cannon Equipment Company (West)	2,176,832	3,400,647	3,280,955	1,824,499	2,410,971	2,434,907	2,929,372	3,794,121	1,828,988	3,284,696	2,736,599	7,498
Henkel Corporation	83,780	80,788	4,214,527	7,933,093	6,640,457	2,223,210	561,788	2,132,697	246,858	168,312	2,428,551	6,654
Mayo Clinic Facilities Management Utilities	1,655,438	1,520,042	1,549,963	1,611,306	1,497,601	1,636,738	2,412,468	2,289,041	1,730,244	1,533,505	1,743,635	4,777
Twin City Container Inc	1,300,864	1,352,478	1,477,402	2,197,029	1,832,728	1,825,994	1,333,777	1,288,147	1,160,230	1,393,620	1,516,227	4,154
The Gardens of Cannon Falls	240,124	497,454	1,526,025	1,276,924	1,512,561	1,873,869	1,857,414	1,625,518	1,778,869	2,088,561	1,427,732	3,912
Cannon Mall Car Wash	1,003,139	1,084,676	1,078,692	1,117,591	969,475	1,018,099	1,627,761	1,711,544	1,722,016	2,024,228	1,335,722	3,660
Sweet Harvest Foods	2,065,371	1,701,819	721,121	585,725	763,014	905,891	1,157,237	1,551,460	1,748,196	1,951,668	1,315,150	3,603
Cannon Equipment Company (East)	614,899	407,688	445,092	666,514	1,055,500	1,083,180	819,866	748,052	925,340	598,442	736,457	2,018
Valley View Recovery Center	868,488	979,199	906,639	550,565	353,829	430,879	391,231	849,041	947,781	1,040,540	731,819	2,005

Cannon Falls Top 10 Industrial Users Monthly Water Usage

	January	February	March	April	May	June	July	August	September	October	November	December
Lorentz Meats	572,532	591,505	652,975	616,769	603,229	540,842	588,418	536,503	521,766	535,755	562,311	536,278
Cannon Equipment Company (West)	177,900	159,471	280,968	216,786	209,529	222,172	272,067	289,197	277,752	227,333	189,407	190,753
Henkel Corporation	198,642	179,464	204,592	196,738	221,648	217,384	282,539	206,911	187,986	184,395	138,390	173,025
Mayo Clinic Facilities Management Utilities	158,043	149,610	154,548	141,083	124,251	137,941	169,658	158,437	133,228	132,106	146,169	142,429
Twin City Container Inc	128,461	129,413	144,075	129,413	135,921	114,228	114,602	114,976	117,743	118,043	127,992	119,552
The Gardens of Cannon Falls												
Cannon Mall Car Wash												
Sweet Harvest Foods												
Cannon Equipment Company (East)	56,852	53,588	55,057	48,175	62,238	79,294	80,715	72,411	84,680	57,750	50,643	48,773
Valley View Recovery Center												

Highlighted are the six large industrial water users that were excluded from growth projections

Appendix A.2: WWTP Site Plan



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EARTH TECH

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FIGURE
SITE PLAN

WASTEWATER TREATMENT PLANT EXPANSION
FOR THE CITY OF CANNON FALLS, MINNESOTA

Appendix A.3: Equipment List

Cannon Falls WWTP
Updated 3/31/25

Process	Unit ID #	Exist. HP	Voltage /Phase	RPM	Drive Type	Seal Water	Controls	Dimensions	Existing Capacity	Exist. TDH	Year Inst.	Model/Notes	Comments/Condition
Raw Wastewater Pump Station													Concrete looks ok. Paint is corroding - needs recoating or lining. Baffled wet well, but self cleaning aspect does not seem to work. Run 2 pumps (alternate x6 months). Have used 4 pumps during peak flows.
Raw Wastewater Pump No. 1	P-1-1-1	15							760 gpm	41'	2022	Submersible - Flygt 6" CP3140-436	Original Drive. Clogs everyday.
Raw Wastewater Pump No. 2	P-1-1-2	15							760 gpm	41'	2022	Submersible - Flygt 6" CP3140-436	
Raw Wastewater Pump No. 3	P-1-1-3	15							760 gpm	41'	2022	Submersible - Flygt 6" CP3140-436	
Raw Wastewater Pump No. 4	P-1-1-4	15							760 gpm	41'	2001	Submersible - Flygt 6" CP3140-436	
Slide Gate	G-1-4-1										2022		
Slide Gate	G-1-4-2										2022		
Sluice Gate	G-1-4-3										2021		
Preliminary Treatment Building													Corrosion on potable water piping, garage door, and influent fittings. Handle on west exterior door is deformed. Influent channel has flooded in high flows. Channel corrosion is low. Replaced air unit.
Parshall Flume	FE-2-19-1							12" throat	5 MGD		2001		
Grit Vortex (Degritter)	M-2-14-1	1		20							2001		
Grit Dewatering Screw Conveyor	M-2-16-1	1									2001		Bottom of auger is corroded. Condition is poor.
Grit Concentrator	M-2-17-1										2001		
Grit Pump	P-2-15-1	10							250 gpm	17'	2001	Wemco	Poor condition
Fine Screen	M-2-3-1	0.5	3p/460v					18"x3' channel. 6mm openi	27 mgd. 12CF/hr		2001	Parkson Aquaguard	Gets clogged when 2 pumps run. Condition is fine.
Manual Bar Screen											2001		
Screenings Compactor/Washer	M-2-4-1	2	3p/460v								2001		
Level sensor											2022		
Sampler?			120V						3 ft/sec. 5 gal	26'			
Mixing Basins													Open air
Mixer No. 1	M-3-1-1	3	460/4.7/3	1,200				12" Impeller			2001	Aqua-Aerobic Floater FSS	New sheath over cords. Power cords are only thing that've been replaced.
Mixer No. 2	M-3-1-2	3	460/4.7/3	1,200				12" Impeller			2001	Aqua-Aerobic Floater FSS	
Mixer No. 3	M-3-1-3	3	460/4.7/3	1,200				12" Impeller			2001	Aqua-Aerobic Floater FSS	
Oxidation Ditches													Only run 1 ditch (alternate x5 years). Have spare gearbox/motor. One ditch is needed for 813 lbs BOD/day. Second ditch needed for 1600-2000 lbs BOD/day.
Mechanical Aerator No. 1	M-3-5-1	100	460/112/3					11'-6" Impeller	65,000 gal volume		2001	Eimco/Ovivo	Bearings replaced
Mechanical Aerator No. 2	M-3-5-2	100	460/112/3					11'-6" Impeller	65,000 gal volume		2001	Eimco/Ovivo	
Final Clarifier Complex													
Alum Storage Tank	T-7-4-1								4,990 gal		2001		1-1.5 years worth of storage (dose minimally). 1 line to decant and one line to RAS or ditches.
Alum System No. 1	M-7-1-1	0.25							0.15-15 gph		2001		Pump hooked to phosphate analyzer replaced last fall. All other accessories are original.
Alum System No. 2	M-7-1-2	0.25							0.15-15 gph		2001		Almost not working.
Alum System No. 3	M-7-1-3	0.25							0.15-15 gph		2001		Non Operational.
Final Clarifier No. 1 Mechanism	M-4-1-1	0.5	460/.8/3					1,590 sq.ft. SA / 14' SWD, 128.7' weir length			2001	Eimco/Ovivo	Rake arms are corroding. Never replaced squeegee or painted. Domes are good (powered vents on domes). O&M states if one ditch is in service, one clarifier is sufficient for plant flows of >0.8mgd.
Final Clarifier No. 2 Mechanism	M-4-1-2	0.5	460/.8/3					1,590 sq.ft. SA / 14' SWD, 128.7' weir length			2001	Eimco/Ovivo	Rake arms are corroding. Never replaced squeegee or painted. Domes are good (powered vents on domes). O&M states if one ditch is in service, one clarifier is sufficient for plant flows of >0.8mgd.
WAS Pump No. 1	P-4-9-1	1.5	460/_/3	870					120 gpm	18.9'	2001	Centrifugal Vanguard	Impellers are wearing.
WAS Pump No. 2	P-4-9-2	1.5	460/_/3	870					120 gpm	18.9'	2001	Centrifugal Vanguard	Impellers are wearing.
RAS Pump No. 1	P-4-3-1	7.5	460/9.4/3	1440					570 gpm	22'	2001	Centrifugal Vanguard	Impellers are wearing.
RAS Pump No. 2	P-4-3-2	7.5	460/9.4/3	1440					570 gpm	22'	2001	Centrifugal Vanguard	Impellers are wearing.
RAS Pump No. 3	P-4-3-3	7.5	460/9.4/3	1440					570 gpm	22'	2001	Centrifugal Vanguard	Impellers are wearing.
Scum Pump	P-4-2-1	5	460/_/3	1750					150 gpm		2001	Vaughn Centrifugal Vanguard	Impellers are wearing.
RAS Flow Meter No. 1											?		Replaced recently (writing this in April 2025).
RAS Flow Meter No. 2											2001		
RAS Flow Meter No. 3											2001		
WAS Flow Meter											2001		
UV Disinfection Building													
Flow Meter	FE-5-1-1							16"	0-5 mgd		2001		Oversized/inaccurate.
UV System No. 1	M-5-3-1								1.64 mgd		2001	Trojan Horizontal	Clean 1x /month. Replace bulbs every 2 years. Controller doesn't work. Replaced ballasts. Run 1 bank.
UV System No. 2	M-5-4-1								1.64 mgd		2001	Trojan Horizontal	
Sampler	M-5-2-1										2020	ISCO	

Administration Building													
													HVAC Issues
Sludge Storage Tank Structure													Membrane roof over generator room is cracking (no leaking noticed).
Aeration Blower No. 1	M-6-1-1	100	460/_/3	1800 (2693 rpm max)					1400 scfm @ 9 psig		2001		Wes starts blowers at night because of odor control issues.
Aeration Blower No. 2	M-6-1-2	100	460/_/3	1800 (2693 rpm max)					1400 scfm @ 9 psig		2001		
Aeration Blower No. 3	M-6-1-3	100	460/_/3	1800 (2693 rpm max)					1400 scfm @ 9 psig		2001		
Aeration Blower No. 4	M-6-1-4	100	460/_/3	1800 (2693 rpm max)					1400 scfm @ 9 psig		2001		
Aeration Blower No. 5	M-6-1-5	100	460/_/3	1800 (2693 rpm max)					1400 scfm @ 9 psig		2001		
Truck Loading Pump No. 1	P-6-2-1	10	460/_/3	1150					975 gpm	19'	2001	Vaughn. Centrifugal Vanguards	
Truck Loading Pump No. 2	P-6-2-2	10	460/_/3						975 gpm	19'	2001	Vaughn. Centrifugal Vanguards	
Generator											2001		
Auto Transfer Switch											2001		Control panel replaced.
Fuel Tank									400 gal		2001		
Fuel Pump											2001		
Tank 1								82' diameter	789,000 gal				Cleaned out tanks in April 2025 and unclogged air piping. Waste to one tank, thicken by decanting, send to second tank. Aerated with stainless coarse bubble diffusers. Phosphate coming back in decant. Achieve ~3% solids (desire to achieve that more efficiently).
Tank 2									789,000 gal				
Miscellaneous													Membrane roof over generator room is cracking (no leaking noticed).
SCADA											2001		Upgrade in 2022. Can control lift station remotely. PLCs & MCCs are all original.

Appendix A.4: Collection System Evaluation Memo

MEMORANDUM

TO: Jon Radermacher, City Administrator
Jed Petersen, Public Works Director

FROM: Bill Angerman, P.E.

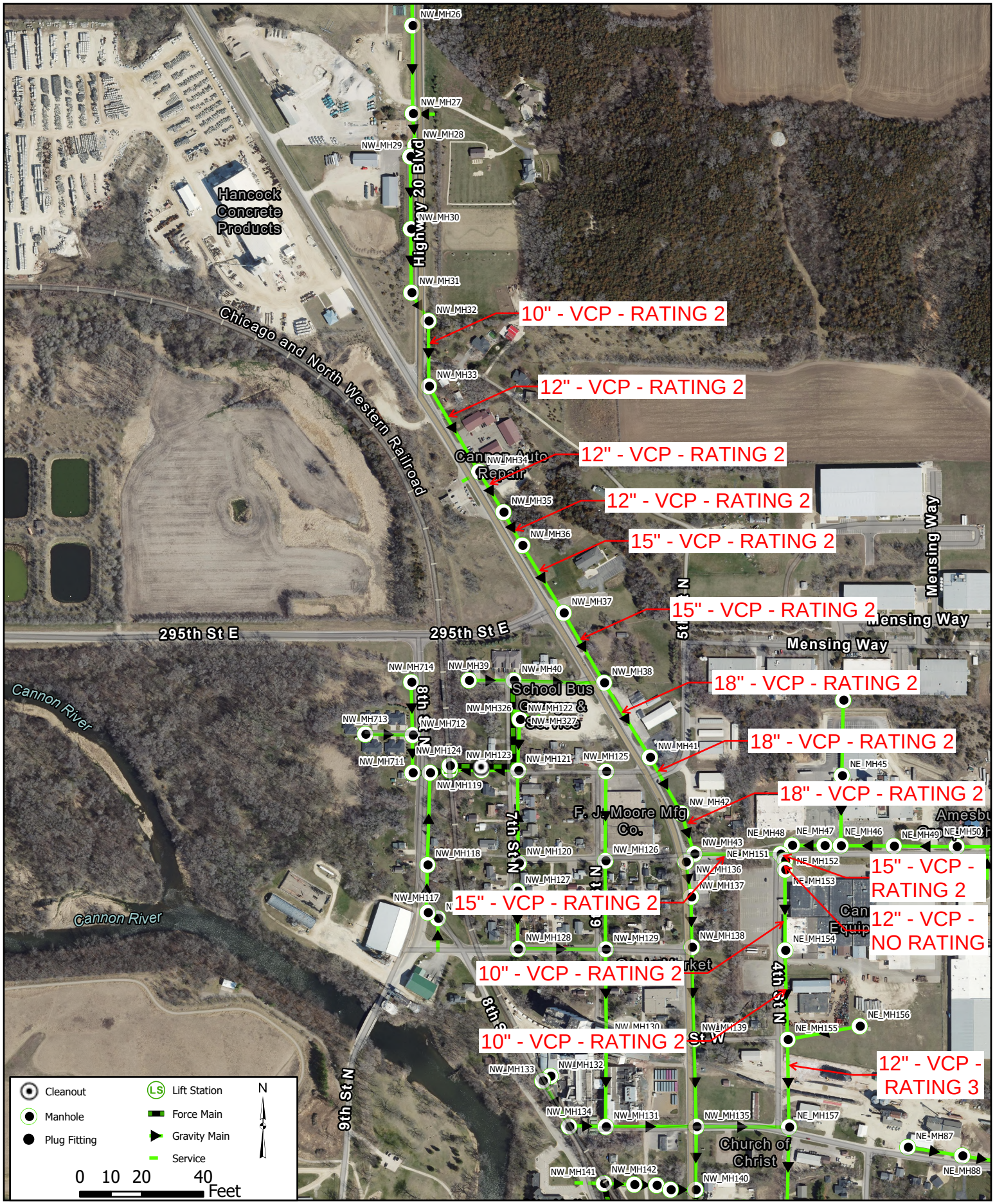
DATE: April 24, 2025

RE: Sanitary Sewer Televising along T.H. 20

The City initiated televising of the sanitary sewer in the northwest portion of the City. This work was initiated due to the potential Tract development project. We have reviewed the sanitary sewer televising that was performed by Hydro-vac on January 30, 2025, for the mains along Trunk Highway 20 and 4th Street. The attached map summarizes the size, material, and rating of the sanitary sewer. The sanitary sewer between manholes 152 and 153 was not fully televised due to debris in the main. Pipe ratings are based on a 1-5 scale with 1 being the best and 5 being the worst. Below is a table that shows the capacity of the mains based on the minimum slope of the pipe. Actual pipe capacity will need survey data to confirm pipe slopes which was not part of this task.

Pipe Size (inches)	Mannings "n"	Min. pipe grade %	Pipe capacity (gpm)
10	0.013	0.28	520
12	0.013	0.22	750
15	0.013	0.15	1123
18	0.013	0.12	1633

Please contact us with any questions.



THE CITY OF CANNON FALLS
GOODHUE, MN

DATE: 04/16/2025 WHKS NO. 9200.25

SANITARY SEWER SYSTEM

whks
engineers + planners + land surveyors

Appendix A.5: NPDES Permit

MINNESOTA POLLUTION CONTROL AGENCY

National Pollutant Discharge Elimination System/State Disposal System

MN0022993

Permittee:	City of Cannon Falls
Facility name:	Cannon Falls Wastewater Treatment Facility
Receiving water:	Cannon River - Class 2Bg, 3, 4A, 4B, 5, 6 water
Township:	Cannon Falls **County:** Goodhue
Issuance date:	May 1, 2024
Expiration date:	April 30, 2029

The state of Minnesota, on behalf of its citizens through the Minnesota Pollution Control Agency (MPCA), authorizes the Permittee to operate a disposal system at the facility named above and to discharge from this facility to the receiving water named above, in accordance with the requirements of this permit.

The goal of this permit is to reduce pollutant levels in point source discharges and protect water quality in accordance with the U.S. Clean Water Act, Minnesota statutes and rules, and federal laws and regulations.

This permit is effective on the issuance date identified above. This permit expires at midnight on the expiration date identified above.

Signature: Paul Kimman

This document has been electronically signed.

for the Minnesota Pollution Control Agency

Paul Kimman
Supervisor
Southeast/Southwest Regional Unit
Municipal Division

Submit eDMRs
Submit via the MPCA e-Services at
https://rsp.pca.state.mn.us/TEMPO_RSP/Orchestrate.do?initiate=true

Submit WQ reports electronically to:

wq.submittals.mpca@state.mn.us
Include *Water quality submittals form*:
https://www.pca.state.mn.us/sites/default/files/wq-wwprm7-71.docx

Questions on this permit?
For eDMR and other permit reporting issues, use the directory listed at the bottom of the DMR page:
https://www.pca.state.mn.us/business-with-us/discharge-monitoring-reports

For specific permit requirements, contact your compliance staff:
https://www.pca.state.mn.us/business-with-us/wastewater-compliance-and-enforcement-staff

Wastewater Permit Program general questions, contact:
MPCA, 651-282-6143 or 800-657-3938.

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1. Permitted facility description

The Cannon Falls Wastewater Treatment facility (facility) is located at 825 Cannon River Avenue, Cannon Falls, Minnesota 55009, Goodhue County, Minnesota.

The facility has a continuous discharge from SD 003 to the Cannon River. This is a Class B facility.

The facility is designed to treat:

- an average wet weather (AWW) flow of 0.92 million gallons per day (MGD);
- an average dry weather (ADW) flow of 0.84 MGD;
- a peak hourly wet weather (PHWW) flow of 3.27 MGD;
- a five-day carbonaceous biochemical oxygen demand ($CBOD_5$) strength of 1,918 pounds per day (lb/day);
- a total suspended solids (TSS) strength of 1,918 lb/day; and
- a total phosphorus strength of 54 lb/day.

The facility consists of a lift station, mechanical and manual bar screens, grit removal, anaerobic/anoxic tanks, oxidation ditches, final clarifiers, ultraviolet light disinfection, and aerobic sludge storage. There are no designed bypass points known to exist in the treatment system.

Changes to the facility may result in an increase in pollutant loading to surface waters or other causes of degradation to surface waters. If a change to the facility will result in a net increase in pollutant loading or other causes of degradation that exceed the maximum loading authorized through conditions specified in the existing permit, the changes to the facility are subject to antidegradation requirements found in Minn. R. 7050.0250 to 7050.0335.

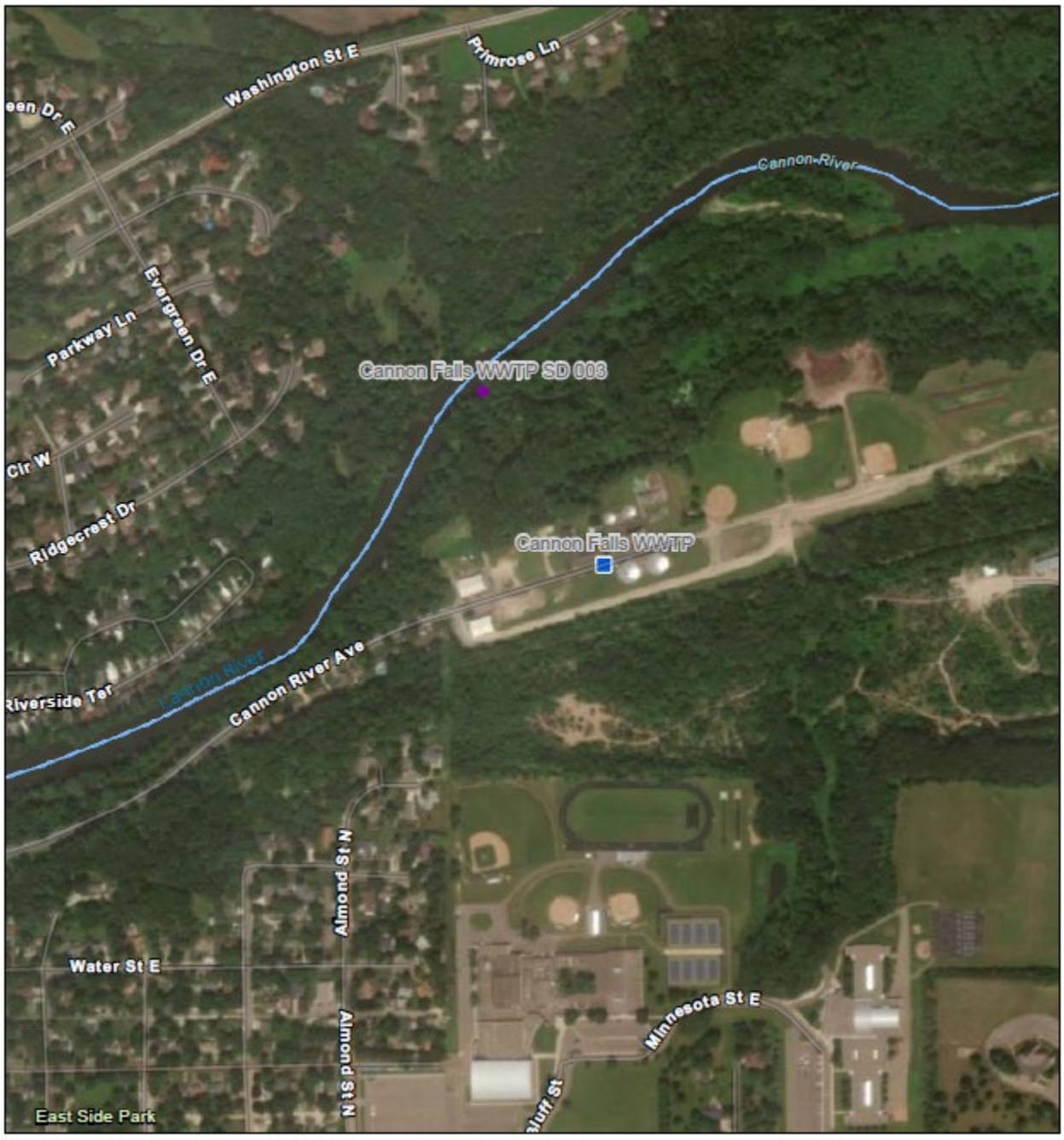
The Cannon River - Class 2Bg, 3, 4A, 4B, 5, 6 water was designated an Outstanding Resource Value Water (ORVW) on November 5, 1984.

This Permit also complies with Minn. R. 7053.0275 regarding anti-backsliding.

Any point source discharger of sewage, industrial, or other wastes for which a National Pollutant Discharge Elimination System (NPDES) permit has been issued by the MPCA that contains effluent limits more stringent than those that would be established by Minn. R. 7053.0215 to 7053.0265 shall continue to meet the effluent limits established by the permit, unless the permittee establishes that less stringent effluent limits are allowable pursuant to federal law, under section 402(o) of the Clean Water Act, United States Code, title 33, section 1342.

2. Location map of permitted facility

Cannon Falls Wastewater Treatment Plant



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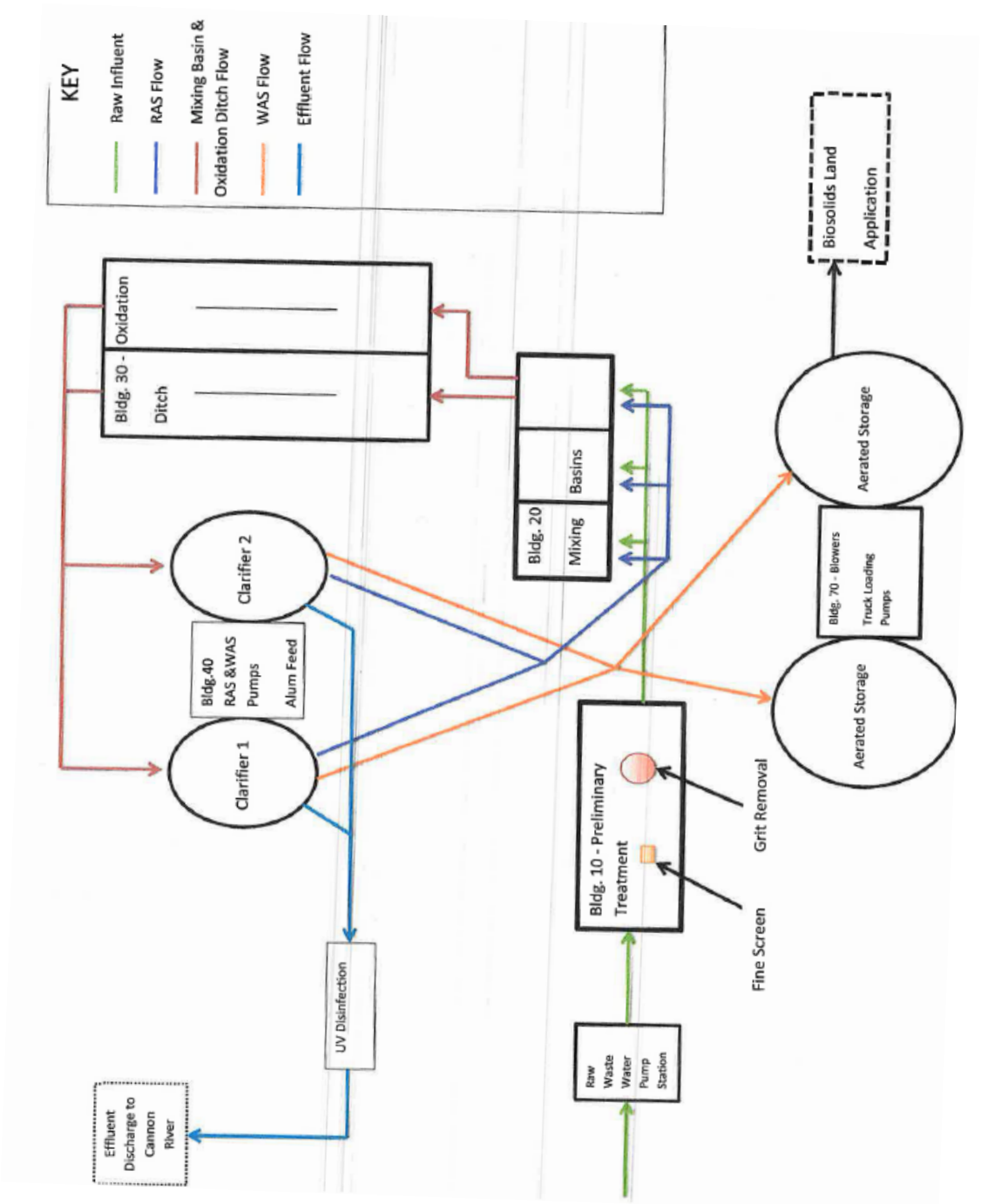
3. Flow diagram



4. Summary of stations and station locations

Station	Type of station	Local name	PLS location
SD 003	Effluent To Surface Water	Main Facility Discharge	T112N, R17W, S08, SW Quarter of the SW Quarter
WS 001	Influent Waste	Influent Waste Stream	T112N, R17W, S08, SW Quarter of the SW Quarter

5. Permit requirements

SD 003	**Effluent To Surface Water**	**Surface Discharge: Class B Minor Facility Effluent Requirements**
	5.1.1	The Permittee shall submit a monthly DMR: due by 21 days after the end of each calendar month following permit issuance. [Minn. R. 7001.0150, subp. 2(B)]
	5.1.2	**Sampling Location**. [Minn. R. 7001.0150, subp. 2(B)]
	5.1.3	Samples for Station SD 003 shall be taken at a point representative of the discharge to surface waters. [Minn. R. 7001.0150, subp. 2(B)]
WS 001	**Influent Waste**	**Waste Stream: Class B Minor Facility Influent Requirements**
	5.2.1	The Permittee shall submit a monthly DMR: due by 21 days after the end of each calendar month following permit issuance. [Minn. R. 7001.0150, Subp. 2(B)]
	5.2.2	**Sampling Location**. [Minn. R. 7001.0150, subp. 2(B)]
	5.2.3	Samples for Station WS 001 shall be taken at a point representative of total influent flow to the facility. [Minn. R. 7001.0150, subp. 2(B)]
MN0022993	**Cannon Falls WWTP**	**Surface Discharge Station General Requirements**
	5.3.1	**Surface Discharge Prohibitions**. [Minn. R. 7001]
	5.3.2	Floating solids or visible foam shall not be discharged in other than trace amounts. [Minn. R. 7001]
	5.3.3	Oil or other substances shall not be discharged in amounts that create a visible color film. [Minn. R. 7001]
	5.3.4	The Permittee shall install and maintain outlet protection measures at the discharge stations to prevent erosion. [Minn. R. 7001]
	5.3.5	**Winter Sampling Conditions**. [Minn. R. 7001]
	5.3.6	The Permittee shall sample flows at the designated monitoring stations including when this requires removing ice to sample the water. If the station is completely frozen throughout a designated sampling month or if unsafe ice conditions exist, the Permittee shall check the "No Discharge/No Flow" box on the eDMR and note the ice conditions in the comments on the eDMR. [Minn. R. 7001]
	5.3.7	**Chlorine Addition Requirements**. [Minn. R. 7001]
	5.3.8	If chlorine is added for any purpose, the Permittee shall monitor the discharge for Total Residual Chlorine (TRC) once per day during chlorine usage. The Permittee shall report the monitoring data on the Sample Values and eDMR in months monitoring is required. If chlorine is added for any purpose outside of the effective period listed in the Limits and Monitoring section of the permit, the data should be submitted as a comment on that month's eDMR. The discharge shall not exceed a 0.038 mg/L TRC limit. [Minn. R. 7001]
	5.3.9	**Sampling Collection and Reporting**. [Minn. R. 7001]
	5.3.10	Effluent monitoring for parameters with a frequency of once per quarter and an effective period of Mar, Jun, Sep, Dec can be sampled any time during that calendar quarter. The Permittee must report the monitoring results on the Sample Values in the month they conducted the sampling and on the eDMR at the end of the quarter. (e.g. The Permittee shall report the sample for the first calendar quarter of Jan-Mar on the Sample Values in the month the sample is collected and on the March eDMR). [Minn. R. 7001]
	5.3.11	The Permittee shall submit monitoring results in accordance with the limits and monitoring requirements for this station. If conditions are such that no sample can be acquired, the Permittee shall report "No Flow" or "No Discharge" on Discharge Monitoring Report (DMR) and shall add a Comments attachment to the DMR detailing why the sample was not collected. [Minn. R. 7001.0150, Subp 2(B)]

	5.3.12	**Mercury Limits and Monitoring Requirements**. [Minn. R. 7001]
	5.3.13	The Permittee is required to sample for total suspended solids (mercury grab sample) at the same time that total mercury and dissolved mercury samples are taken. [Minn. R. 7001]
	5.3.14	Total and dissolved mercury samples shall be grab samples and shall be analyzed using the most recent revisions of EPA Methods 1631 and 1669. The Permittee is authorized to use another mercury analytical method that has a reportable level of <0.5 ng/L which allows for low-level sample characterization as long as the method is approved by the EPA and certified by an MPCA accreditation body. [Minn. R. 7001]
	5.3.15	Effluent monitoring for mercury with a frequency of once per month and an effective period of Jul are to be taken once during the month of July. [Minn. R. 7001]
	5.3.16	**Nitrogen Limits and Monitoring Requirements**. [Minn. R. 7001]
	5.3.17	"Total Nitrogen" with a sample type of "Calculation" is to be reported as the summation of the total Kjeldahl nitrogen and total nitrite plus nitrate nitrogen values. [Minn. R. 7001]
	5.3.18	**Phosphorus Limit Types and Calculations**. [Minn. R. 7001]
	5.3.19	"12-Month Moving Average" is a rolling average. For the first 11 months after this limit becomes effective, add all of the monthly average values starting with the first full month the final limit became effective and divide by the number of months since that same date. This value should be reported on the eDMR in the 12-Month Moving Average field. If using the eDMR calculator tool, replace the calculated value with the value calculated above as the eDMR calculated value will not be correct until 12 months of data are collected following permit reissuance. Starting the 12th month after this limit became effective and thereafter, add all of the monthly average values during the last 12 months and divide by 12. Starting the 12th month after this limit became effective and thereafter, the eDMR calculator tool will provide the correct value for this limit. [Minn. R. 7001]
	5.3.20	"12-Month Moving Total" is a rolling total. For the first 11 months after this limit becomes effective, report the mass phosphorus discharged by calculating each month's kg/month, then adding each month's kg/month from the first month the new limit is effective through the 11th month after this limit became effective. This value should be reported on the eDMR in the 12-Month Moving Total field. If using the eDMR calculator tool, replace the calculated value with the value calculated above as the eDMR calculated value will not be correct until 12 months of data are collected following permit reissuance. Starting the 12th month after this limit became effective and thereafter, calculate each kg/month then add all of the monthly values during the last twelve months, starting with the monthly total for the month of the current reporting period. Calculate kg/month for each month by multiplying the total volume of effluent flow (MG) x the monthly average concentration x 3.785 conversion factor to get kg/month. Starting the 12th month after this limit became effective and thereafter, the eDMR calculator tool will provide the correct value for this limit. [Minn. R. 7001]
		Waste Stream Station General Requirements
	5.4.21	**Sampling Collection and Reporting**. [Minn. R. 7001]
	5.4.22	The Permittee shall submit monitoring results in accordance with the limits and monitoring requirements for this station. If conditions are such that no sample can be acquired, the Permittee shall report "No Flow" or "No Discharge" on Discharge Monitoring Report (DMR) and shall add a Comments attachment to the DMR detailing why the sample was not collected. [Minn. R. 7001.0150, Subp 2(B)]

	5.4.23	Influent monitoring for parameters with a frequency of once per quarter and an effective period of Mar, Jun, Sep, Dec can be sampled any time during that calendar quarter. The Permittee must report the monitoring results on the Sample Values in the month they conducted the monitoring and on the eDMR at the end of the quarter. (e.g. The Permittee shall report the sample for the first calendar quarter of Jan-Mar on the Sample Values in the month the sample is collected and on the March eDMR). [Minn. R. 7001]
	5.4.24	**Nitrogen Limits and Monitoring Requirements**. [Minn. R. 7001]
	5.4.25	"Total Nitrogen" with a sample type of "Calculation" is to be reported as the summation of the total Kjeldahl nitrogen and total nitrite plus nitrate nitrogen values. [Minn. R. 7001]
		Mercury Minimization Plan
	5.5.26	The Permittee is required to complete and submit a Mercury Minimization Plan (MMP) to the MPCA as detailed in this section. If the Permittee has previously submitted a MMP, it shall update its MMP and submit the updated MMP to the MPCA. The purpose of the MMP is to evaluate collection and treatment systems to determine possible sources of mercury as well as potential mercury reduction options. Guidelines for developing a MMP are detailed in this section. [Minn. R. 7001]
	5.5.27	The specific mercury monitoring requirements are detailed in the limits and monitoring section of this permit. Information gained through the MMP process can be used to reduce mercury concentrations. As part of its mercury control strategy, the Permittee should consider selecting activities based on the potential of those activities to reduce mercury loadings to the wastewater treatment facility. [Minn. R. 7001]
	5.5.28	The Permittee shall submit a MMP: due by 180 days prior to permit expiration. [Minn. R. 7001]
	5.5.29	At a minimum, the MMP shall include the following: a. A summary of mercury influent and effluent concentrations and biosolids monitoring data using the most recent five years of monitoring data, if available. b. Identification of existing and potential sources of mercury concentrations and/or loading to the facility. As appropriate for your facility, you should consider residential, institutional, municipal, and commercial sources (such as dental clinics, hospitals, medical clinics, nursing homes, schools, laundries, and industries with potential for mercury contributions). You should also consider other influent mercury sources, such as stormwater inputs, ground water (inflow & infiltration) inputs, lift station components, and waste streams or sewer tributaries to the wastewater treatment facility. c. An evaluation of past and present WWTF operations to determine those operating procedures that maximize mercury removal. d. A summary of any mercury reduction activities implemented during the last five years. e. A plan to implement mercury management and reduction measures during the next five years. [Minn. R. 7001]
		Mechanical System
	5.6.30	**Bypass Structures**. [Minn. R. 7001]
	5.6.31	All structures capable of bypassing the treatment system shall be manually controlled and kept locked at all times. [Minn. R. 7001.0030]
	5.6.32	**Sanitary Sewer Extension Permit**. [Minn. R. 7001]
	5.6.33	The Permittee may be required to obtain a sanitary sewer extension permit from the MPCA for any addition, extension, or replacement to the sanitary sewer. If a sanitary sewer extension permit is required, construction may not begin until plans and specifications have been submitted and a written permit is granted except as allowed in Minn. Stat. 115.07, subd. 3b. [Minn. R. 7001.0020]
	5.6.34	**Operator Certification**. [Minn. R. 7001]

	5.6.35	The Permittee shall provide a Class B state certified operator who maintains direct responsibility of the operation, maintenance, and testing functions required to ensure compliance with the terms and conditions of this permit. [Minn. R. 9400]
	5.6.36	The Permittee shall provide the appropriate number of operators with a Type IV certification to be responsible for the land application of biosolids or semisolids from commercial or industrial operations. [Minn. R. 7048]
	5.6.37	If the Permittee chooses to meet operator certification requirements through a contractual agreement, the Permittee shall provide a copy of the contract to the MPCA, WQ Submittals Center. The contract shall include: A. The certified operator's name, certificate number, company name (if appropriate), and the period covered by the contract and provisions for renewal; B. The duties and responsibilities of the certified operator; C. The duties and responsibilities of the Permittee; and D. Provisions for notifying the MPCA 30 days in advance of termination if the contract is terminated prior to the expiration date. [Minn. R. 9400]
	5.6.38	The Permittee shall notify the MPCA within 30 days of a change in operator certification or contract status. [Minn. R. 9400]
		Pretreatment: Nondelegated Requirements
	5.7.39	"Individual Control Mechanism" means a document, such as an agreement or permit, which imposes limitations or requirements on an individual industrial user of the publicly owned treatment works (POTW). [Minn. R. 7049]
	5.7.40	"Significant Industrial User" (SIU) means any industrial user that: A. Is subject to Categorical Pretreatment Standards, as defined in Minn. R. 7049.0120, subp. 5; B. Discharges 25,000 gallons per day or more of process wastewater, excluding sanitary, noncontact cooling, or boiler blowdown wastewater, to the POTW; C. Contributes a process wastewater containing five percent or more of the flow or load of any pollutant of concern to the POTW; or D. Is designated as significant by the Permittee or the MPCA on the basis that the industrial user has a reasonable potential to adversely impact the POTW's operation or violate any pretreatment standard or requirement. [Minn. R. 7049]
	5.7.41	**Permittee Responsibility to Control Users**. [Minn. R. 7049]
	5.7.42	It is the Permittee's responsibility to regulate the discharge from users of its POTW. The Permittee shall prevent any pass through of pollutants or any inhibition or disruption of the Permittee's POTW, its treatment processes, or its sludge processes or disposal that contribute to the violation of the conditions of this permit or any federal or state law or regulation limiting the release of pollutants from the POTW. [Minn. R. 7049]

	5.7.43	The Permittee shall prohibit the discharge of the following to its POTW: A. Pollutants that create a fire or explosion hazard, including any discharge with a flash point less than 60 degrees C (140 degrees F); B. Pollutants that will cause corrosive structural damage to the POTW, including any waste stream with a pH of less than 5.0; C. Solid or viscous pollutants which would obstruct flow; D. Any pollutant, including oxygen-demanding pollutants such as biochemical oxygen demand, released at a flow rate or pollutant concentration that will cause interference or pass-through; E. Heat that would inhibit biological activity, including any discharge that would cause the temperature of the waste stream at the POTW treatment plant headwork's to exceed 40 degrees C (104 degrees F); F. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that would cause interference or pass-through; and G. Pollutants that produce toxic gases, vapors, or fumes that may endanger the health or safety of workers. [Minn. R. 7049]
	5.7.44	The Permittee shall prohibit new discharges of non-contact cooling waters unless there is no cost effective alternative. Existing discharges of non-contact cooling water to the Permittee's POTW shall be eliminated, where elimination is cost effective, or where an infiltration/inflow analysis and sewer system evaluation survey indicates the need for such removal. [Minn. R. 7049]
	5.7.45	If the Permittee accepts trucked-in wastes, the Permittee shall evaluate the trucked-in wastes prior to acceptance in the same manner as it monitors sewered wastes. The Permittee shall accept trucked-in wastes only at specifically designated points. [Minn. R. 7049]
	5.7.46	Pollutant of concern means a pollutant that is or may be discharged by an industrial user that is or reasonably should be of concern on the basis that it may cause the Permittee to violate any permit limits on the release of pollutants. The following pollutants shall be evaluated to determine if they should be pollutants of concern: A. Pollutants limited in this permit; B. Pollutants for which monitoring is required in this permit; C. Pollutants that are likely to cause inhibition of the Permittee's POTW; D. Pollutants which may interfere with sludge disposal; and E. Pollutants for which the Permittee's POTW has limited capacity. [Minn. R. 7049]
	5.7.47	**Control of Significant Industrial Users**. [Minn. R. 7049]
	5.7.48	The Permittee shall impose pretreatment requirements on SIUs to ensure compliance with all applicable effluent limitations and other requirements set forth in this permit or any federal or state law or regulation limiting the release of pollutants from the POTW. These requirements shall be applied to SIUs by means of an individual control mechanism. [Minn. R. 7049]
	5.7.49	The Permittee shall not knowingly enter into an individual control mechanism with any user that would allow the user to contribute an amount or strength of wastewater that would cause violation of any limitation or requirement in the permit, or any applicable federal, state, or local law or regulation. [Minn. R. 7049]
	5.7.50	**Monitoring of Significant Industrial Users**. [Minn. R. 7049]
	5.7.51	The Permittee shall obtain specific information from SIUs on the quality and quantity of the SIU's discharges to the Permittee's POTW. Except where specifically requested by the Permittee and approved by the MPCA, this information shall be obtained by means of representative monitoring conducted by the Permittee or by the SIU under requirements imposed by the Permittee in the SIU's individual control mechanism. Monitoring performed to comply with this requirement shall include all pollutants for which the SIU is significant and shall be done at a frequency commensurate with the significance of the SIU. [Minn. R. 7049]
	5.7.52	**Reporting and Notifications**. [Minn. R. 7049]

	5.7.53	The Permittee shall submit a Pretreatment Annual Report: due by 31 days after the end of each calendar year following permit issuance if a SIU discharges to the POTW during a given calendar year. [Minn. R. 7049]
	5.7.54	The Permittee shall submit the Pretreatment Annual Report found on the MPCA's website at https://www.pca.state.mn.us/business-with-us/wastewater-pretreatment or shall provide equivalent information. [Minn. R. 7049]
	5.7.55	The Permittee shall submit the Pretreatment Annual Report to the MPCA, WQ Submittals Center. [Minn. R. 7049]
	5.7.56	The Permittee shall notify the MPCA in writing of any of the following: A. Any SIU of the Permittee's POTW which has not been previously disclosed to the MPCA; B. Anticipated or actual changes in the volume or quality of discharge by an industrial user that could result in the industrial user becoming an SIU as defined in this section; or C. Anticipated or actual changes in the volume or quality of discharges by a SIU that would require changes to the SIU's required local limits. This notification shall be submitted within 30 days of identifying the industrial user as a SIU. Where changes are proposed, they shall be submitted prior to changes being made. [Minn. R. 7049]
	5.7.57	Upon notifying the MPCA of a SIU or change in a SIU discharge as required above, the Permittee shall submit the following information using the forms found on the MPCA's website at https://www.pca.state.mn.us/water/wastewater-pretreatment or in a comparable format: A. The identity of the SIU and a description of the SIU's operation and process; B. A characterization of the SIU's discharge; C. The required local limits that will be imposed on the SIU; D. A technical justification of the required local limits; and E. A plan for monitoring the SIU which is consistent with monitoring requirements in this section. [Minn. R. 7049]
	5.7.58	In addition, the Permittee shall, upon request, submit the following to the MPCA for approval: A. Additional information on the SIU, its processes, and discharge; B. A copy of the individual control mechanism used to control the SIU; C. The Permittee's legal authority to be used for regulating the SIU; and D. The Permittee's procedures for enforcing the requirements imposed on the SIU. [Minn. R. 7049]
	5.7.59	The Permittee shall notify the MPCA of any of its industrial users that may be subject to National Categorical Pretreatment Standards. [Minn. R. 7049]
	5.7.60	This permit may be modified in accordance with Minn. R. ch. 7001 to require development of a pretreatment program approvable under the Federal General Pretreatment Regulation (40 CFR 403). [Minn. R. 7049]
		Biosolids: Land Application
	5.8.61	**Authorization**. [Minn. R. 7041]
	5.8.62	This permit authorizes the Permittee to store and land apply domestic wastewater treatment biosolids in accordance with the provisions in this section and Minn. R. ch. 7041. [Minn. R. 7041]
	5.8.63	Permittees who prepare bulk biosolids shall obtain approval of the sites on which bulk biosolids are applied before they are applied unless they are Exceptional Quality Biosolids. Site application procedures are set forth in Minn. R. 7041.0800. [Minn. R. 7041.0600, Minn. R. 7041.0800]
	5.8.64	**Compliance Responsibility**. [Minn. R. 7041]

	5.8.65	The Permittee is responsible for ensuring that the applicable requirements in this section and Minn. R. ch. 7041 are met when biosolids are prepared, distributed, and/or applied to the land. [Minn. R. 7041]
	5.8.66	**Notification Requirements**. [Minn. R. 7041]
	5.8.67	The Permittee shall provide information needed to comply with the biosolids requirements of Minn. R. ch. 7041 to others who prepare or use the biosolids. [Minn. R. 7041]
	5.8.68	**Pollutant Limits**. [Minn. R. 7041]
	5.8.69	Biosolids which are applied to the land shall not exceed the ceiling concentrations in Table 1 and shall not be applied so that the cumulative amounts of pollutant in Table 2 are exceeded. Table 1 Ceiling Concentrations (dry weight basis) Parameter in units mg/kg Arsenic 75 Cadmium 85 Copper 4300 Lead 840 Mercury 57 Molybdenum 75 Nickel 420 Selenium 100 Zinc 7500 Table 2 Cumulative Loading Limits Parameter in units lbs/acre Arsenic 37 Cadmium 35 Copper 1339 Lead 268 Mercury 15 Molybdenum not established* Nickel 375 Selenium 89 Zinc 2500 *The cumulative limit for molybdenum has not been established at the time of permit issuance. [Minn. R. 7041.1100]
	5.8.70	**Pathogen and Vector Attraction Reduction**. [Minn. R. 7041]
	5.8.71	Biosolids shall be processed, treated, or be incorporated or injected into the soil to meet one of the vector attraction reduction requirements in Minn. R. 7041.1400. [Minn. R. 7041.1400]
	5.8.72	Biosolids shall be processed or treated by one of the alternatives in Minn. R. 7041.1300 to meet the Class A or Class B standards for the reduction of pathogens. When Class B biosolids are applied to the land, the site restrictions in Minn. R. 7041.1300 shall also be met. [Minn. R. 7041.1300]

	5.8.73	The minimum duration between application and harvest, grazing, or public access to areas where Class B biosolids have been applied to the land is as follows: A. 14 months for food crops whose harvested parts may touch the soil/biosolids mixture (such as melons, squash, tomatoes, etc.), when biosolids are surface applied, incorporated, or injected; B. 20 months or 38 months depending on the application method for food crops whose harvested parts grow in the soil (such as potatoes, carrots, onions, etc). The 20-month time period is required when biosolids are surface applied or surface applied and incorporated after they have been on the soil surface for at least four months. The 38-month time period is required when the biosolids are injected or surface applied and incorporated within four months of application; C. 30 days for feed crops, other food crops (such as field corn, sweet corn, etc.), hay, or fiber crops when biosolids are surface applied, incorporated, or injected; D. 30 days for grazing of animals when biosolids are surface applied, incorporated, or injected; and E. One year where there is a high potential for public contact with the site (such as a reclamation site located in populated areas, a construction site located in a city, turf farms, plant nurseries, etc.) and 30 days where there is low potential for public contact (such as agricultural land, forest, a reclamation site located in an unpopulated area, etc.) when biosolids are surface applied, incorporated, or injected. [Minn. R. 7041]
	5.8.74	**Management Practices**. [Minn. R. 7041]
	5.8.75	The management practices for the land application of biosolids are described in detail in Minn. R. 7041.1200 and shall be followed unless specified otherwise in a site approval letter or a permit issued by the MPCA. [Minn. R. 7041]
	5.8.76	Overall management requirements: A. Biosolids shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat; B. Biosolids shall not be applied to flooded, frozen, or snow covered ground so that the biosolids enter wetlands or other waters of the state; C. Biosolids shall be applied at an agronomic rate unless specified otherwise by the MPCA in a permit; and D. Biosolids shall not be applied within 33 feet of a wetland or waters of the state unless specified otherwise by the MPCA in a permit. [Minn. R. 7041]
	5.8.77	**Monitoring Requirements**. [Minn. R. 7041]
	5.8.78	Representative samples of biosolids applied to the land shall be analyzed by methods specified in Minn. R. 7041.3200 for the following parameters: arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, Kjeldahl nitrogen, ammonia nitrogen, total solids, volatile solids, phosphorus, potassium, and pH. [Minn. R. 7041.3200]

5.8.79

At a minimum, biosolids shall be monitored at the frequencies specified in Table 3 for the parameters listed above, and any pathogen or vector attraction reduction requirements in Minn. R. 7041.1300 and 7041.1400 if used to determine compliance with those parts.

Table 3 Minimum Sampling Frequencies

Biosolids Applied* (metric tons/365-day period)	Biosolids Applied* (tons/365-day period)	Frequency (times/365-day period)
>0 but <290	>0 but <320	1
>=290 but <1,500	>=320 but <1,650	4
>=1,500 but <15,000	>=1,650 but <16,500	6
>=15,000	>=16,500	12

*Either the amount of bulk biosolids applied to the land or the amount of biosolids received by a person who prepares biosolids that are sold or given away in a bag or other container for application to the land (dry weight basis). [Minn. R. 7041.1300]

5.8.80

Representative samples of biosolids that are transferred to storage units and are stored for more than two years shall be analyzed by methods specified in Minn. R. 7041.3200 for each cropping year they are stored for the following parameters: arsenic, cadmium, copper, lead, molybdenum, nickel, selenium, and zinc.

Mercury is specifically NOT included in the stored biosolids analysis because of the short holding time (28 days) required between sampling and analysis. [Minn. R. 7041.1300, Minn. R. 7041.3200]

5.8.81

Increased sampling frequencies are specified for the parameters listed in Table 4. Sampling at a frequency at twice the minimum frequencies in Table 3 is required if concentrations listed in Table 4 are exceeded (based on the average of all analyses made during the previous cropping year).

Table 4 Increased Frequency of Sampling

Parameter (mg/kg dry weight basis)	
Arsenic	38
Cadmium	43
Copper	2150
Lead	420
Mercury	28
Molybdenum	38
Nickel	210
Selenium	50
Zinc	3750. [Minn. R. 7041]

5.8.82

Records. [Minn. R. 7041]

5.8.83

The Permittee shall keep records of the information necessary to show compliance with pollutant concentrations and loadings, pathogen reduction requirements, vector attraction reduction requirements, and management practices as specified in Minn. R. 7041.1600, as applicable to the quality of biosolids produced. [Minn. R. 7041.1600]

5.8.84

Reporting Requirements. [Minn. R. 7041]

5.8.85

The Permittee shall submit a Biosolids Annual Report: due annually, by the 31st of December. [Minn. R. 7041.1700]

5.8.86

The Permittee shall submit the Biosolids Annual Report found on the MPCA's website at https://www.pca.state.mn.us/business-with-us/wastewater-operator-resources or shall provide equivalent information in another MPCA approved format. The report shall include the requirements in Minn. R. 7041.1700. [Minn. R. 7041.1700]

	5.8.87	The Biosolids Annual Report shall be submitted by December 31 of each year for biosolids storage and/or transfer activities occurring during the cropping year previous to December 31. Cropping year means a year beginning on September 1 of the year prior to the growing season and ending August 31 the year the crop is harvested. For example, the 2019 cropping year began September 1, 2018 and ended August 31, 2019. [Minn. R. 7041]
	5.8.88	The Biosolids Annual Report shall indicate whether or not biosolids were transferred and/or stored. If biosolids were transferred, the report shall describe: A. How much was transferred; B. Where it was transferred to; C. The name of the facility that accepted the transfer; and D. The contact person at that facility. [Minn. R. 7041]
	5.8.89	For biosolids that are stored for more than two years, the Biosolids Annual Report shall also include the analytical data from the representative sample of the biosolids generated during the cropping year. [Minn. R. 7041]
	5.8.90	The Permittee shall submit the Biosolids Annual Report to the MPCA, WQ Submittals Center. [Minn. R. 7041]
	5.8.91	The Permittee shall notify the MPCA in writing when 90 percent or more of any of the cumulative pollutant loading rates listed for any land application sites has been reached for a site. [Minn. R. 7041]
		Total Facility Requirements (NPDES/SDS)
	5.9.92	**Definitions.** Refer to the Permit User's Manual found on the MPCA's website at https://www.pca.state.mn.us/sites/default/files/wq-wwtp7-09.pdf for standard definitions. [Minn. R. 7001]
	5.9.93	**Incorporation by Reference.** This permit incorporates the following applicable federal and state laws applicable to the Permittee and enforceable parts of this permit: 40 CFR pts. 122.41, 122.42, 136, 403 and 503; Minn. R. chs. 7001, 7041, 7045, 7050, 7052, 7053, 7060, and 7080; and Minn. Stat. chs. 115 and 116. [Minn. R. 7001]
	5.9.94	**Permittee Responsibility.** The Permittee shall perform the actions or conduct the activity authorized by this permit in compliance with the conditions of the permit and, if required, in accordance with the plans and specifications approved by the MPCA. [Minn. R. 7001.0150, subp. 3(E)]
	5.9.95	**Toxic Discharges Prohibited.** Whether or not this permit includes effluent limitations for toxic pollutants, the Permittee shall not discharge a toxic pollutant except according to 40 CFR pts. 400 to 460 and Minn. R. chs. 7050, 7052, 7053 and any other applicable MPCA rules. [Minn. R. 7001.1090, subp. 1(A)]
	5.9.96	**Nuisance Conditions Prohibited.** The Permittee's discharge shall not cause any nuisance conditions including, but not limited to: floating solids, scum and visible oil film, excessive suspended solids, material discoloration, obnoxious odors, gas ebullition, deleterious sludge deposits, undesirable slimes or fungus growths, aquatic habitat degradation, excessive growths of aquatic plants, acutely toxic conditions to aquatic life, or other adverse impact on the receiving water. [Minn. R. 7050.0210, subp. 2]
	5.9.97	**Property Rights.** This permit does not convey a property right or an exclusive privilege. [Minn. R. 7001.0150, subp. 3(C)]
	5.9.98	**Liability Exemption.** In issuing this permit, the State and the MPCA assume no responsibility for damage to persons, property, or the environment caused by the activities of the Permittee in the conduct of its actions, including those activities authorized, directed, or undertaken under this permit. To the extent the State and the MPCA may be liable for the activities of its employees, that liability is explicitly limited to that provided in the Tort Claims Act. [Minn. R. 7001.0150, subp. 3(O)]

	5.9.99	The MPCA's issuance of this permit does not obligate the MPCA to enforce local laws, rules, or plans beyond what Minnesota statutes authorize. [Minn. R. 7001.0150, subp. 3(D)]
	5.9.100	**Liabilities.** The MPCA's issuance of this permit does not release the Permittee from any liability, penalty, or duty imposed by Minnesota or federal statutes or rules or local ordinances, except the obligation to obtain the permit. [Minn. R. 7001.0150, subp. 3(A)]
	5.9.101	The issuance of this permit does not prevent the future adoption by the MPCA of pollution control rules, standards, or orders more stringent than those now in existence and does not prevent the enforcement of these rules, standards, or orders against the Permittee. [Minn. R. 7001.0150, subp. 3(B)]
	5.9.102	**Severability.** The provisions of this permit are severable and, if any provisions of this permit or the application of any provision of this permit to any circumstance are held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. [Minn. R. 7001]
	5.9.103	**Compliance with Other Rules and Statutes.** The Permittee shall comply with all applicable air quality, solid waste, and hazardous waste statutes and rules in the operation and maintenance of the facility. [Minn. R. 7001]
	5.9.104	**Inspection and Entry.** When authorized by Minn. Stat. ch. 115.04, 115B.17, subd. 4, and 116.091, and upon presentation of proper credentials, the Permittee shall allow the MPCA, or an authorized employee or agent of the MPCA, to enter at reasonable times upon the property of the Permittee to examine and copy books, papers, records, or memoranda pertaining to the construction, modification, or operation of the facility covered by the permit or pertaining to the activity covered by the permit; and to conduct surveys and investigations, including sampling or monitoring, pertaining to the construction, modification, or operation of the facility covered by the permit or pertaining to the activity covered by the permit. [Minn. R. 7001.0150, subp. 3(I)]
	5.9.105	**Control Users.** The Permittee shall regulate the users of its facility to prevent the introduction of pollutants or materials that may result in the inhibition or disruption of the conveyance system, treatment facility or processes, or disposal system that would contribute to the violation of the conditions of this permit or any federal, state, or local law or regulation. [Minn. R. 7001.0150, subp. 3(F)]
	5.9.106	**Sampling**. [Minn. R. 7001]
	5.9.107	**Representative Sampling.** The Permittee shall conduct samples and measurements required by this permit as specified in this permit and shall be representative of the discharge or monitored activity. [Minn. R. 7001.0150, subp. 2(B)]
	5.9.108	**Additional Sampling.** If the Permittee monitors more frequently than required, they shall report the results and the frequency of monitoring on their eDMR for that reporting period. [Minn. R. 7001.1090, subp. 1(E)]
	5.9.109	**Certified/Accredited Laboratory.** A laboratory accredited by the Minnesota Department of Health [Minn. R. 4740.2010 through Minn. R. 4740.2120] and/or certified by the MPCA [Minn. R. 7001.4310 through Minn. R. 7001.4390] shall conduct analyses required by this permit, unless approved in writing by the MPCA. A certified/accredited laboratory does not need to complete analyses of dissolved oxygen, pH, temperature, specific conductance, and total residual oxidants (chlorine, bromine). Those analyses shall comply with 40 CFR pt. 136. Dissolved oxygen, pH, and total residual oxidants must be performed on-site. Follow the manufacturer's specifications for equipment maintenance and use. [Minn. R. 4740.2010-4740.2120, Minn. R. 7001.4310-7001.4390]
	5.9.110	**Sample Preservation and Procedure.** Sample preservation and test procedures for the analysis of pollutants shall conform to 40 CFR pt. 136 and Minn. R. 7041.3200. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7041.3200]
	5.9.111	**Equipment Calibration.** The Permittee shall check and/or calibrate flow meters, pumps, flumes, lift stations, or other flow monitoring equipment used for purposes of determining compliance (within plus or minus ten percent of the true flow values) with permit requirements at least twice annually. [Minn. R. 7001.0150, subp. 2(B & C)]

	5.9.112	**Maintain Records.** The Permittee shall keep the records required by this permit for at least three years, including any calculations, original recordings from automatic monitoring instruments, and laboratory sheets. The Permittee shall extend these record retention periods upon request of the MPCA. The Permittee shall maintain records for each sample and measurement. The records shall include the following information: A. The exact place, date, and time of the sample or measurement; B. The date and time of analysis; C. The name of the person who performed the sample collection, measurement, analysis, or calculation; D. The analytical techniques, procedures, and methods used; and E. The results of the analysis. [Minn. R. 7001.0150, subp. 2(C)]
	5.9.113	**Completing Reports.** The Permittee shall submit the results of the required sampling and monitoring activities on the forms provided, specified, or approved by the MPCA. The Permittee shall record the information in the specified areas on those forms and in the units specified. Required forms may include a Sample Values Form. If required, the Permittee shall record individual values for each sample and measurement on the Sample Values Form provided by the MPCA. The Permittee shall submit Sample Values Form with the appropriate eDMRs. The Permittee may design and use their own Sample Values Form; however, the Permittee shall not use their form until the MPCA reviews and approves the form. Note: The Permittee shall also record required summary information on their eDMR. Permittee submitted summary information contained only on the Sample Values Form does not comply with reporting requirements. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7001.1090, subp. 1(D)]
	5.9.114	**Submitting Reports.** The Permittee shall submit eDMRs, Sample Values Forms, and other supplemental attachment forms via MPCA e-Services after the MPCA approves their authorization request. The Permittee shall electronically submit eDMRs, Sample Values Forms, and other supplemental attachment forms by the 21st day of the month following the sampling period or otherwise as specified in this permit. The Permittee shall complete eDMR submittal on or before 11:59 p.m. of the 21st day of the month following the sampling period or as otherwise specified in this permit. The Permittee shall submit an eDMR for each required station even if no discharge occurred during the reporting period. The Permittee shall submit other reports required by this permit electronically. The Permittee shall submit reports by the date specified in this permit. The Permittee shall submit on or before 11:59 p.m. on the date specified in this permit. Electronically: wq.submittals.mpca@state.mn.us Include Water quality submittals form: www.pca.state.mn.us/sites/default/files/wq-wwprm7-71.docx. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7001.0150, subp. 3(H)]
	5.9.115	**Incomplete or Incorrect Reports.** The Permittee shall immediately submit an electronically amended report or eDMR to the MPCA upon discovery by the Permittee or notification by the MPCA that it has submitted an incomplete or incorrect report or eDMR. The amended report or eDMR shall contain the missing or corrected data along with a comment on the eDMR explaining the circumstances of the incomplete or incorrect report. If it is impossible to amend the report or eDMR electronically, the Permittee shall immediately notify the MPCA and the MPCA will provide direction for the amendment submittals. [Minn. R. 7001.0150, subp. 3(G)]

	5.9.116	**Required Signatures.** The Permittee or the duly authorized representative of the Permittee shall sign all eDMRs, forms, reports, and other documents submitted to the MPCA per Minn. R. 7001.0150, subp. 2(D). The person or persons who sign the eDMRs, forms, reports, or other documents shall certify that he or she understands and complies with the certification requirements of Minn. R. chs. 7001.0070 and 7001.0540, including the penalties for submitting false information. A registered professional engineer shall certify technical documents, such as design drawings and specifications, and engineering studies submitted as part of a permit application or by permit conditions. [Minn. R. 7001.0540]
	5.9.117	**Reporting Limit (RL).** The Permittee shall report monitoring results below the RL of a particular instrument as "<" the value of the RL. For example, if an instrument has a RL of 0.1 mg/L and a parameter is not detected at a value of 0.1 mg/L or greater, the Permittee shall report the concentration as "< 0.1 mg/L." The Permittee shall not use "non-detected," "undetected," "below detection limit," or "zero" when reporting results. The MPCA considers these terms as permit reporting violations. Where sample values are less than the RL and the permit requires reporting of an average, the Permittee shall calculate the average as follows: A. If some values are less than (<) the RL, substitute zero for all non-detectable values to use in the average calculation; B. If all values are less than (<) the RL, calculate the average and report as < the RL average concentration; and C. To calculate a mass loading with a less than (<) the RL concentration, use the RL value in the calculation and then add the "<" to the product of the concentration and the volume. [Minn. R. 7001.0150, subp. 2(B)]
	5.9.118	**Records.** The Permittee shall, when requested by the MPCA, submit within a reasonable time the information and reports that are relevant to the control of pollution regarding the construction, modification, or operation of the facility covered by the permit or regarding the conduct of the activity covered by the permit. [Minn. R. 7001.0150, subp. 3(H)]
	5.9.119	**Confidential Information.** Except for data determined to be confidential according to Minn. Stat. ch. 116.075, subd. 2, all reports required by this permit are available for public inspection. The MPCA does not consider effluent data confidential. To request the MPCA maintain data as confidential, the Permittee shall follow Minn. R. 7000.1300. [Minn. R. 7000.1300]
	5.9.120	**Noncompliance and Enforcement**. [Minn. R. 7001]
	5.9.121	**Subject to Enforcement Action and Penalties.** Noncompliance with a term or condition of this permit subjects the Permittee to penalties provided by federal and state law set forth in section 309 of the Clean Water Act; United States Code, title 33, section 1319, as amended; and in Minn. Stat. ch. 115.071 and 116.072, including monetary penalties, imprisonment, or both. [Minn. R. 7001.1090, subp. 1(B)]
	5.9.122	**Criminal Activity.** The Permittee shall not knowingly make a false statement, representation, or certification in a record or other document submitted to the MPCA. A person who falsifies a report or document submitted to the MPCA, or tampers with, or knowingly renders inaccurate a monitoring device or method that requires maintenance under this permit is subject to criminal and civil penalties provided by federal and state law. [Minn. R. 7001.0150, subp. 3(G), Minn. R. 7001.1090, subp. 1(G & H), Minn. Stat. ch. 609.671, subd. 1]
	5.9.123	**Noncompliance Defense.** It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [40 CFR 122.41(c)]

	5.9.124	**Effluent Violations.** If sampling by the Permittee indicates a violation of any discharge limitation specified in this permit, the Permittee shall immediately make every effort to verify the violation by collecting additional samples, if appropriate, investigate the cause of the violation, and take action to prevent future violations. If the Permittee discovers that noncompliance with a condition of the permit occurred and that the noncompliance could endanger human health, public drinking water supplies, or the environment, the Permittee shall within 24 hours of the discovery of the noncompliance orally notify the Commissioner and submit a written description of the noncompliance within five days of the discovery. If the Permittee discovers other noncompliance that does not explicitly endanger human health, public drinking water supplies, or the environment, the Permittee shall report the description of noncompliance within 30 days of the discovery. If no eDMR is required within 30 days, the Permittee shall submit a written report including the description of noncompliance within 30 days of the discovery of the noncompliance. This description shall include the following information: A. A description of the event including volume, duration, monitoring results, and receiving waters; B. The cause of the event; C. The steps taken to reduce, eliminate, and prevent reoccurrence of the event; D. The exact dates and times of the event; and E. Steps taken to reduce any adverse impact resulting from the event. [Minn. R. 7001.0150, subp. 3(K)]
	5.9.125	**Upset Defense.** In the event of temporary noncompliance with applicable effluent limitation(s) resulting from an upset at the Permittee's facility due to factors beyond the control of the Permittee, the Permittee has an affirmative defense to an enforcement action brought by the MPCA as a result of the noncompliance if the Permittee demonstrates by a preponderance of competent evidence: A. The specific cause of the upset; B. That the upset was unintentional; C. That the upset resulted from factors beyond the reasonable control of the Permittee and did not result from operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or increases in production which are beyond the design capability of the treatment facilities; D. That at the time of the upset the facility was being properly operated; E. That the Permittee properly notified the Commissioner of the upset in accordance with Minn. R. 7001.1090, subp. 1(I); and F. That the Permittee implemented the remedial measures required by Minn. R. 7001.0150, subp. 3(J). [Minn. R. 7001.1090]
	5.9.126	**Release**. [Minn. R. 7001]
	5.9.127	**Unauthorized Releases of Wastewater Prohibited.** This permit prohibits overflows, discharges, spills, or other releases of wastewater or materials to the environment, whether intentional or not, except for discharges from outfalls specifically authorized by this permit. The MPCA will consider the Permittee's compliance with permit requirements, frequency of release, quantity, type, location, and other relevant factors when determining appropriate action. [40 CFR 122.41, Minn. Stat. ch. 115.061]

	5.9.128	**Discovery of a Release.** Upon discovery of a release, the Permittee shall: A. Take all reasonable steps to immediately end the release; B. Notify the Minnesota Department of Public Safety Duty Officer at 800-422-0798 or 651-649-5451 (metro area) immediately upon discovery of the release. The Permittee may contact the MPCA during business hours at 800-657-3864 or 651-296-6300 (metro area); and C. Recover as rapidly and as thoroughly as possible all substances and materials released or immediately take other action as may be reasonably possible to minimize or abate pollution to waters of the state or potential impacts to human health caused thereby. If the Permittee cannot immediately or completely recover the released materials or substances, the Permittee shall contact the MPCA. If directed by the MPCA, the Permittee shall consult with other local, state, or federal agencies (such as the Minnesota Department of Natural Resources and/or the Wetland Conservation Act authority) for implementation of additional clean up or remediation activities in wetland or other sensitive areas. [Minn. R. 7001.1090]
	5.9.129	**Sampling of a Release.** Upon discovery of a release, the Permittee shall: A. Collect representative samples of the release. The Permittee shall sample the release for permitted effluent parameters and other parameters of concern immediately following discovery of the release. The Permittee may contact the MPCA during business hours to discuss the sampling parameters and protocol. In addition, the Permittee shall collect fecal coliform bacteria samples where the Permittee determines that the release contains or may contain sewage. If the Permittee cannot immediately stop the release, the Permittee shall consult with the MPCA regarding additional sampling requirements. The Permittee shall collect samples at least, but not limited to, two times per week for as long as the release continues; and B. Submit the sampling results on the Release Report located on the MPCA's website at https://www.pca.state.mn.us/business-with-us/discharge-monitoring-reports. The Permittee shall submit the Release Report to the MPCA with the next eDMR or within 30 days, whichever is sooner. [Minn. R. 7001.1090]
	5.9.130	**Bypass**. [Minn. R. 7001]
	5.9.131	**Anticipated Bypass.** The Permittee may allow any bypass to occur that does not cause effluent limitation exceedances, but only if the bypass is for essential maintenance to assure efficient operation of the facility. The Permittee shall submit prior notice to the MPCA at least ten days before the date of the bypass, if possible. The notice of the need for an anticipated bypass shall include the following information: A. The proposed date and estimated duration of the bypass; B. The alternatives to bypassing; and C. A proposal for effluent sampling during the bypass. Any bypass wastewater shall enter waters of the state from outfalls specifically authorized by this permit. Therefore, the Permittee shall collect samples at the frequency and location identified in this permit or two times per week for as long as the bypass continues, whichever is more frequent. [40 CFR 122.41(m)(2 & 3), Minn. R. 7001.1090, subp. 1(J)]

	5.9.132	This permit prohibits all other bypasses. The MPCA may take enforcement action against the Permittee for a bypass, unless the specific conditions described in Minn. R. 7001.1090 subp. 1(K) and 40 CFR 122.41(m)(4)(i) are met. In the event of an unanticipated bypass, the Permittee shall: A. Take all reasonable steps to immediately end the bypass; B. Notify the Minnesota Department of Public Safety Duty Officer at 800-422-0798 or 651-649-5451 (metro area) immediately upon commencement of the bypass. The Permittee may contact the MPCA during business hours at 800-657-3864 or 651-296-6300 (metro area); C. Immediately take action as may be reasonably possible to minimize or abate pollution to waters of the state or potential impacts to human health caused thereby. If directed by the MPCA, the Permittee shall consult with other local, state, or federal agencies for implementation of abatement, clean up, or remediation activities; and D. Only allow bypass wastewater as specified in this section to enter waters of the state from outfalls specifically authorized by this permit. The Permittee shall collect samples at the frequency and location identified in this permit or two times per week for as long as the bypass continues, whichever is more frequent. The Permittee shall also follow the reporting requirements for effluent violations as specified in this permit. [40 CFR 122.41(m)(4)i, Minn. R. 7001.1090, subp. 1(K), Minn. Stat. ch. 115.061]
	5.9.133	**Notification of the Public.** Following immediate notification to the Minnesota Department of Public Safety Duty Officer and the MPCA of any discharge event that could endanger human health, public drinking water supplies, or the environment, or a Release or Bypass, as described above, the Permittee shall promptly notify the public and any drinking water facility of the discharge. Notice to the public and to any drinking water facility must be made using the most efficient communications system available to the facility owner such as in person, telephone call, radio, social media, webpage, or another expedited form. In addition, signage must be posted at all impacted public use areas within the same jurisdiction or notification must be provided to the entity that has jurisdiction over any impacted public use areas. A notice under this requirement must include the date and time of the discharge, a description of the material released, a warning of the potential public health risk, and the Permittee's contact information. [Minn. Stat. ch. 115.061]
	5.9.134	**Operation and Maintenance**. [Minn. R. 7001]
	5.9.135	The Permittee shall at all times properly operate and maintain the facilities and systems of treatment and control, and the appurtenances related to them which are installed or used by the Permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. The Permittee shall install and maintain appropriate backup or auxiliary facilities if they are necessary to achieve compliance with the conditions of the permit and, for all permits other than hazardous waste facility permits, if these backup or auxiliary facilities are technically and economically feasible. [Minn. R. 7001.0150, subp. 3(F)]
	5.9.136	In the event of a reduction or loss of effective treatment of wastewater at the facility, the Permittee shall control production or curtail discharges to the extent necessary to maintain compliance with the terms and conditions of this permit. The Permittee shall continue this control or curtailment until they restore facility treatment processes or until the Permittee provides an alternative method of treatment. [Minn. R. 7001.1090, subp. 1(C)]
	5.9.137	**Solids Management.** The Permittee shall properly store, transport, and manage biosolids, septage, sediments, residual solids, filter backwash, screenings, oil, grease, and other substances so that pollutants do not enter surface waters or groundwaters of the state. The Permittee shall manage solids in accordance with local, state, and federal requirements. [40 CFR 503, Minn. R. 7041]

	5.9.138	**Scheduled Maintenance.** The Permittee shall schedule maintenance of the treatment works during non-critical water quality periods to prevent water quality degradation, except where the facility requires emergency maintenance to prevent a condition that would be detrimental to water quality or human health. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7001.0150, subp. 3(F)]
	5.9.139	**Control Tests.** The Permittee shall conduct in-plant control tests at a frequency adequate to ensure compliance with the conditions of this permit. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7001.0150, subp. 3(F)]
	5.9.140	**Changes to the Facility or Permit**. [Minn. R. 7001]
	5.9.141	**Permit Modifications.** Except as provided under Minn. Stat. ch. 115.07, subd. 1 and 3, no person required by statute or rule to obtain a permit may construct, install, modify, or operate the facility to be permitted, nor shall a person commence an activity for which a permit is required by statute or rule until the MPCA issues a written permit for the facility or activity. Permittees that propose to make changes to the facility or discharge that requires permit modification shall follow Minn. R. 7001.0190. If the Permittee cannot determine whether the proposed changes require a permit modification, the Permittee shall contact the MPCA prior to any action. The MPCA recommends that Permittees submit the application for permit modification to the MPCA at least 180 days prior to the planned change. [Minn. R. 7001.0030]
	5.9.142	This permit does not require plans, specifications, and MPCA approval when maintenance dictates the need for installation of new equipment, provided the equipment is the same design size and has the same design intent. For instance, Permittees can replace a broken pipe, lift station pump, aerator, or blower with the same design-sized equipment without MPCA approval. If this permit does not expressly authorize the Permittee proposed construction, the MPCA may require a permit modification. If the proposed construction project requires an Environmental Assessment Worksheet under Minn. R. 4410, no construction shall begin until the MPCA issues a negative declaration and the Permittee receives or implements all approvals. [Minn. R. 7001.0030]
	5.9.143	**Report Changes.** The Permittee shall give advance notice as soon as possible to the MPCA of any substantial changes in operational procedures, activities that may alter the nature or frequency of the discharge, and/or material factors that may affect compliance with the conditions of this permit. [Minn. R. 7001.0150, subp. 3(M)]

	5.9.144	**Chemical Additives.** The Permittee shall receive prior written approval from the MPCA before increasing the use of a chemical additive authorized by this permit, or using a chemical additive not authorized by this permit, in quantities or concentrations that have the potential to change the characteristics, nature, and/or quality of the discharge. The Permittee shall request approval for an increase or new use of a chemical additive at least 60 days, or as soon as possible, before the proposed increase or new use. The Permittee shall include at least the following information for the proposed additive as instructed in the chemical additive approvals section on the MPCA's website at https://www.pca.state.mn.us/business-with-us/wastewater-permit-additional-guidance-and-information: A. The process for which the additive will be used; B. Safety Data Sheet (SDS) which shall include aquatic toxicity, human health, and environmental fate information for the proposed additive. The aquatic toxicity information shall include at minimum the results of: a) a 48-hour LC50 or EC50 acute study for a North American freshwater planktonic crustacean (either Ceriodaphnia or Daphnia sp.) and b) a 96-hour LC50 acute study for rainbow trout, bluegill, or fathead minnow or another North American freshwater aquatic species other than a planktonic crustacean; C. A complete product use and instruction label; D. The commercial and chemical names and Chemical Abstract Survey (CAS) number for all ingredients in the additive (If the SDS does not include information on chemical composition, including percentages for each ingredient totaling to 100%, the Permittee shall contact the supplier to have this information provided); and E. The proposed method of application, application frequency, concentration, and daily average and maximum rates of use. Upon review of the information submitted regarding the proposed chemical additive, the MPCA may require additional information be submitted for consideration. This permit may be modified to restrict the use or discharge of a chemical additive and include additional influent and effluent monitoring requirements. Approval for the use of an additive shall not justify the exceedance of any effluent limitation nor shall it be used as a defense against pollutant levels in the discharge causing or contributing to the violation of a water quality standard. [Minn. R. 7001.0170]
	5.9.145	**MPCA Initiated Permit Modification, Suspension, or Revocation.** The MPCA may modify or revoke and reissue this permit pursuant to Minn. R. 7001.0170. The MPCA may revoke without reissuance of this permit pursuant to Minn. R. 7001.0180. [Minn. R. 7001.0170, Minn. R. 7001.0180]
	5.9.146	**Total Maximum Daily Load (TMDL) Impacts.** The MPCA may require facilities that discharge to an impaired surface water, watershed, or drainage basin to comply with additional permits or permit requirements. These requirements can include additional restriction or relaxation of limits and monitoring as authorized by the CWA 303(d)(4)(A) and 40 CFR ch. 122.44(l)(2)(i), necessary to ensure consistency with the assumptions and requirements of any applicable EPA approved wasteload allocations resulting from TMDL studies. [40 CFR 122.44(l)(2)(i)]
	5.9.147	**Permit Transfer.** This permit is not transferable to any person without the express written approval of the MPCA after compliance with the requirements of Minn. R. 7001.0190. A person who receives permit transference shall comply with the conditions of this permit. [Minn. R. 7001.0150, subp. 3(N)]

	5.9.148	**Facility Closure.** The Permittee is responsible for closure and post-closure care of the facility. The Permittee shall notify the MPCA of a significant reduction or cessation of the activities described in this permit at least 180 days before the reduction or cessation. The MPCA may require the Permittee to provide a Facility Closure Plan to the MPCA for approval. The MPCA may require a permit modification or reissuance for facility closure that could result in a potential long-term water quality concern, such as the ongoing discharge of wastewater to surface or groundwater. The MPCA may require the Permittee to establish and maintain financial assurance to ensure performance of certain obligations under this permit, including closure, post-closure care, and remedial action at the facility. If the MPCA requires financial assurance, the MPCA shall approve the amount and type of financial assurance, and proposed modifications to previously MPCA-approved financial assurance. [Minn. Stat. ch. 116.07, subd. 4]
	5.9.149	**Permit Reissuance.** If the Permittee desires to continue permit coverage beyond the date of permit expiration, the Permittee shall submit an application for permit reissuance: due by 180 days prior to permit expiration. [Minn. R. 7001.0040]
	5.9.150	If the Permittee does not intend to continue the activities authorized by this permit after the expiration date of this permit, the Permittee shall notify the MPCA in writing at least 180 days before permit expiration. If the Permittee has submitted a timely application for permit reissuance, the Permittee may continue to conduct the activities authorized by this permit, in compliance with the requirements of this permit, until the MPCA takes final action on the application, unless the MPCA determines any of the following: A. The Permittee is not in substantial compliance with the requirements of this permit, or with a stipulation agreement or compliance schedule designed to bring the Permittee into compliance with this permit; B. The MPCA, as a result of an action or failure to act by the Permittee, has been unable to take final action on the application on or before the expiration date of the permit; or C. The Permittee has submitted an application with major deficiencies or has failed to properly supplement the application in a timely manner after being informed of deficiencies. [Minn. R. 7001.0040, Minn. R. 7001.0160]

6. Submittal action summary

SD 003	**Effluent To Surface Water**	
		Surface Discharge: Class B Minor Facility Effluent Requirements
	6.1.1	The Permittee shall submit a monthly DMR: due by 21 days after the end of each calendar month following permit issuance. [Minn. R. 7001.0150, subp. 2(B)]
WS 001	**Influent Waste**	
		Waste Stream: Class B Minor Facility Influent Requirements
	6.2.1	The Permittee shall submit a monthly DMR: due by 21 days after the end of each calendar month following permit issuance. [Minn. R. 7001.0150, Subp. 2(B)]
MN0022993	**Cannon Falls WWTP**	
		Mercury Minimization Plan
	6.3.1	The Permittee shall submit a MMP: due by 180 days prior to permit expiration. [Minn. R. 7001]
		Pretreatment: Nondelegated Requirements
	6.4.2	The Permittee shall submit a Pretreatment Annual Report: due by 31 days after the end of each calendar year following permit issuance if a SIU discharges to the POTW during a given calendar year. [Minn. R. 7049]
		Biosolids: Land Application
	6.5.3	The Permittee shall submit a Biosolids Annual Report: due annually, by the 31st of December. [Minn. R. 7041.1700]
		Total Facility Requirements (NPDES/SDS)
	6.6.4	**Permit Reissuance.** If the Permittee desires to continue permit coverage beyond the date of permit expiration, the Permittee shall submit an application for permit reissuance: due by 180 days prior to permit expiration. [Minn. R. 7001.0040]

7. Limits and monitoring

The Permittee shall comply with the limits and monitoring requirements as specified below.

		Discharge limitations							Monitoring requirements			
Subject item	**Parameter**	**Quantity /Loading avg.**	**Quantity /Loading max.**	**Quantity /Loading units**	**Quality /Conc. min.**	**Quality /Conc. avg.**	**Quality /Conc. max.**	**Quality/ Conc. units**	**Frequency**	**Sample type**	**Effective period**	**Notes**
SD 003 Main Facility Discharge	BOD, Carbonaceous 05 Day (20 Deg C)	50 calendar month average	79 maximum calendar week average	kilograms per day		25 calendar month average	40 maximum calendar week average	milligrams per liter	once per week	24-Hour Flow Composite	Jan-Dec	
SD 003 Main Facility Discharge	BOD, Carbonaceous 05 Day (20 Deg C) Percent Removal				85 minimum calendar month average			percent	once per month	Calculation	Jan-Dec	
SD 003 Main Facility Discharge	Fecal Coliform, MPN or Membrane Filter 44.5C					200 calendar month geometric mean		organisms per 100 milliliter	once per week	Grab	Apr-Oct	
SD 003 Main Facility Discharge	Flow		Monitor only. calendar month total	million gallons		Monitor only. calendar month average	Monitor only. calendar month maximum	million gallons per day	once per day	Measurement, Continuous	Jan-Dec	
SD 003 Main Facility Discharge	Hardness, Calcium & Magnesium, Calculated (as CaCO3)						Monitor only. calendar quarter maximum	milligrams per liter	once per quarter	24-Hour Flow Composite	Mar, Jun, Sep, Dec	Total Nickel, Total Zinc, and Total Hardness shall be taken at the same time.
SD 003 Main Facility Discharge	Mercury, Dissolved (as Hg)						Monitor only. calendar month maximum	nanograms per liter	once per month	Grab	Jul	
SD 003 Main Facility Discharge	Mercury, Total (as Hg)						Monitor only. calendar month maximum	nanograms per liter	once per month	Grab	Jul	

		Discharge limitations							Monitoring requirements			
Subject item	**Parameter**	**Quantity /Loading avg.**	**Quantity /Loading max.**	**Quantity /Loading units**	**Quality /Conc. min.**	**Quality /Conc. avg.**	**Quality /Conc. max.**	**Quality/ Conc. units**	**Frequency**	**Sample type**	**Effective period**	**Notes**
SD 003 Main Facility Discharge	Nickel, Total (as Ni)					Monitor only. calendar quarter average		micrograms per liter	once per quarter	24-Hour Flow Composite	Mar, Jun, Sep, Dec	Total Nickel, Total Zinc, and Total Hardness shall be taken at the same time.
SD 003 Main Facility Discharge	Nitrite Plus Nitrate, Total (as N)					Monitor only. calendar quarter average		milligrams per liter	once per quarter	24-Hour Flow Composite	Mar, Jun, Sep, Dec	
SD 003 Main Facility Discharge	Nitrogen, Ammonia, Total (as N)					Monitor only. calendar month average		milligrams per liter	once per month	24-Hour Flow Composite	Mar, Sep	
SD 003 Main Facility Discharge	Nitrogen, Kjeldahl, Total					Monitor only. calendar quarter average		milligrams per liter	once per quarter	24-Hour Flow Composite	Mar, Jun, Sep, Dec	
SD 003 Main Facility Discharge	Nitrogen, Total (as N)					Monitor only. calendar quarter average		milligrams per liter	once per quarter	Calculation	Mar, Jun, Sep, Dec	
SD 003 Main Facility Discharge	Oxygen, Dissolved				Monitor only. calendar month minimum			milligrams per liter	once per day	Grab	Jan-Dec	
SD 003 Main Facility Discharge	pH				6.0 calendar month minimum		9.0 calendar month maximum	standard units	once per week	Grab	Jan-Dec	
SD 003 Main Facility Discharge	Phosphorus, Total (as P)	Monitor only. calendar month average		kilograms per day		Monitor only. calendar month average		milligrams per liter	once per week	24-Hour Flow Composite	Jan-Dec	

		Discharge limitations							Monitoring requirements			
Subject item	**Parameter**	**Quantity /Loading avg.**	**Quantity /Loading max.**	**Quantity /Loading units**	**Quality /Conc. min.**	**Quality /Conc. avg.**	**Quality /Conc. max.**	**Quality/ Conc. units**	**Frequency**	**Sample type**	**Effective period**	**Notes**
SD 003 Main Facility Discharge	Phosphorus, Total (as P)		1271 12-month moving total	kilograms per year		1.0 12-month moving average		milligrams per liter	once per month	Calculation	Jan-Dec	
SD 003 Main Facility Discharge	Solids, Total Dissolved (TDS)					Monitor only. calendar month average		milligrams per liter	once per month	24-Hour Flow Composite	Apr, Sep	
SD 003 Main Facility Discharge	Solids, Total Suspended (TSS)	60 calendar month average	89 maximum calendar week average	kilograms per day		30 calendar month average	45 maximum calendar week average	milligrams per liter	once per week	24-Hour Flow Composite	Jan-Dec	
SD 003 Main Facility Discharge	Solids, Total Suspended (TSS) Percent Removal				85 minimum calendar month average			percent	once per month	Calculation	Jan-Dec	
SD 003 Main Facility Discharge	Solids, Total Suspended (TSS), grab (Mercury)						Monitor only. calendar month maximum	milligrams per liter	once per month	Grab	Jul	
SD 003 Main Facility Discharge	Sulfate, Total (as SO4)						Monitor only. calendar month maximum	milligrams per liter	once per month	24-Hour Flow Composite	Jan-Dec	
SD 003 Main Facility Discharge	Zinc, Total (as Zn)					Monitor only. calendar quarter average		micrograms per liter	once per quarter	24-Hour Flow Composite	Mar, Jun, Sep, Dec	Total Nickel, Total Zinc, and Total Hardness shall be taken at the same time.
WS 001 Influent Waste Stream	BOD, Carbonaceous 05 Day (20 Deg C)					Monitor only. calendar month average	Monitor only. calendar month maximum	milligrams per liter	once per week	24-Hour Flow Composite	Jan-Dec	

		Discharge limitations							Monitoring requirements			
Subject item	**Parameter**	**Quantity /Loading avg.**	**Quantity /Loading max.**	**Quantity /Loading units**	**Quality /Conc. min.**	**Quality /Conc. avg.**	**Quality /Conc. max.**	**Quality/ Conc. units**	**Frequency**	**Sample type**	**Effective period**	**Notes**
WS 001 Influent Waste Stream	Flow		Monitor only. calendar month total	million gallons		Monitor only. calendar month average	Monitor only. calendar month maximum	million gallons per day	once per day	Measurement, Continuous	Jan-Dec	
WS 001 Influent Waste Stream	Nitrite Plus Nitrate, Total (as N)					Monitor only. calendar quarter average		milligrams per liter	once per quarter	24-Hour Flow Composite	Mar, Jun, Sep, Dec	
WS 001 Influent Waste Stream	Nitrogen, Kjeldahl, Total					Monitor only. calendar quarter average		milligrams per liter	once per quarter	24-Hour Flow Composite	Mar, Jun, Sep, Dec	
WS 001 Influent Waste Stream	Nitrogen, Total (as N)					Monitor only. calendar quarter average		milligrams per liter	once per quarter	Calculation	Mar, Jun, Sep, Dec	
WS 001 Influent Waste Stream	pH				Monitor only. calendar month minimum		Monitor only. calendar month maximum	standard units	once per week	Grab	Jan-Dec	
WS 001 Influent Waste Stream	Phosphorus, Total (as P)					Monitor only. calendar month average		milligrams per liter	once per week	24-Hour Flow Composite	Jan-Dec	
WS 001 Influent Waste Stream	Precipitation		Monitor only. calendar month total	inches					once per day	Measurement	Jan-Dec	
WS 001 Influent Waste Stream	Solids, Total Suspended (TSS)					Monitor only. calendar month average	Monitor only. calendar month maximum	milligrams per liter	once per week	24-Hour Flow Composite	Jan-Dec	